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BRICK and CLAY RECORD

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The EDITOR'S CORNER

WHEN COSTS COUNT

IF THERE ever was a time when manufacturing costs counted, that time is right now. It is no secret that competition is very, very keen right now and the margin of profit very small. The clay manufacturer who when times were good, saw the advisability of remodeling his plant to lower production costs, is the one who is making the most margin of profit and perhaps is even promised a fair year despite a market that is "not so good."

It is peculiar, yet true, that when things are going good, the greatest proportion of manufacturers feel that as long as they are making money there is no need to modernize their plant; to dispose of worn out and obsolete machinery and replace with smoothly running equipment and labor saving apparatus that will both raise the quality of the ware and lower the cost of production.

It is this class of manufacturers who are finding the going hard sledding right now. Moreover, some have found it even necessary to suspend operations temporarily: However, the thing to do is not to wait until the time when business will be rosy again and a larger margin of profit possible, but to get busy immediately and equip the plant right now to operate at lowest possible cost and not only make fair returns now, but make it possible to earn larger profits when times are good.

This process of retrenching applies also to supply houses catering to the clay industry. It will be noticed that a few concerns supplying equipment to the clay producer are now finding competition keen and as a result are finding it necessary to reduce expenses, and some of them have ceased to advertise their products. However, the machinery supply house should realize that the clay manufacturer is in the same position that he (the equipment man) is. The clay manufacturer is now interested in finding some means of lowering his costs and if the machinery manufacturer has something that will do this, now is the time to inform the industry about it.

A reliable concern that has real labor saving equipment that merits con-

sideration by the clay producer is on the job because he has the right machinery and clay manufacturers judge his equipment and reliability by his present actions.

* * *

WE ARE INDEPENDENT OF FOREIGN ECONOMIC CONDITIONS

TOO FREQUENTLY in the past few months, has the cry been made that this country is compelled to await an improvement in conditions in foreign lands before a return to normalcy can be expected. However,

Thomas A. Edison said something the other day of far more interest to salesmen than his widely discussed list of Questions. It goes as follows:

"I have been thru five depressions during my business life. They all act alike. This latest one acts exactly like all the rest. The men, who if business fell off 66 per cent. increased their selling effort 75 per cent. managed to pull thru as if there was no depression, and the efforts of such men tend to shorten the periods of depression."

facts show that American prosperity can be wholly independent of the situation in any other part of the world.

The idea that business cannot get back on regular basis until foreign commerce is thoroly restored to its usual volume, is not consistent with facts. The truth is that if prosperity seems to lag anywhere, and business is still slow, it is simply because we have not sufficiently studied our own problems, and have not applied the necessary punch and cooperation to the local situation we may be facing.

That this is true is borne out in the clear size-up of the current outlook presented by Geo. M. Reynolds, chairman of the Continental and Commercial Bank, Chicago, in an address delivered in that city Thursday evening, June 30, in which he said in part:

"Foreign trade for the United States is both necessary and desirable. However, in seeking a lead for the revival of American business attention should not be focused on foreign trade to the exclusion of domestic business. American exports have constituted only some six or eight per cent. of the total sales of this country during the period of maximum exports.

"The domestic market is definitely under American control, to be revived if proper thought and action are taken. A clear ray of hope offers in the thought that measures looking toward business revival can be taken at home and at once."

This will be full of vital encouragement for every progressive clay product manufacturer thruout the country.

It means—what we all know, at second thought, is true—that we don't have to wait until somebody else or some other nation on the other side of the sea gets back to running form, before we can expect to make good.

* * *

CLAY MANUFACTURERS ARE PROFITEERS?

INVESTIGATIONS into the construction industry and its various component parts have and are being carried on in many centers of the country. It is not infrequent that clay products manufacturers have been lampooned as pirates, profiteers and what not, during the course of the examination. Newspapers have been full of vicious attacks on the industry and in some instances have even treated the matter editorially. An instance of this is the "Financial America," New York, editorial of June 17.

Thus far the tendency of clay manufacturers has been to ignore the unjust, inaccurate and ridiculous charges made against them but it seems that this policy has kept them in suspicion and it is time that the misinformed public know something about the truth of the case.

In the first place the price of clay products is affected by the three principal items of: Transportation, fuel and labor. In the case of most other commodities, prices are affected by labor

and raw material costs, chiefly. However, the producer of clay ware requires an immense amount of fuel, as is evident from the fact that it is the third largest industrial user of coal. Special grades of coal are required and the freight cost in many instances far exceeds the actual cost of the fuel itself. On the average, the freight cost on coal today is greater than the cost of the coal delivered to the plant, was five years ago.

Secondly, clay ware is a heavy product, hence is vitally affected by any change in freight rates. Whereas, it has been pointed out that the increase in freight rates has affected the cost of a suit of clothes shipped from New York to Chicago, but a few cents, the affect on clay products has been such that on a haul of but fifteen to twenty miles, it has added several dollars to the cost of a thousand brick.

Here are two specific examples: The brick plants supplying the City of Buffalo are located from 14 to 21 miles from the city, those sites being the nearest clay deposits available. It costs \$5.00 a thousand to ship brick into the city by rail.

Fieldsboro, N. J., produces a large quantity of building brick and Trenton is the natural market. The increase in the freight rate of brick from Fieldsboro to Trenton is 505 per cent. over the 1916 rate.

This situation not only hurts the brick manufacturer by reducing the area of his market, but is a disadvantage to everyone. The railroads are not gaining despite the high rates because the shipment of brick has been curtailed, directly due to the impracticable pressed into service wherever cal rates. Motor trucks have had to feasible.

In the erection of a moderate priced home today there are two of the major items which show satisfactory deflation—the masonry and carpentry components. These items are not more than 50 per cent. higher than they were in 1914. On the other hand, plumbing and heating equipment is from 150 to 175 per cent higher than in 1914. The financing charge is from 200 to 300 per cent. higher than it was in 1914. Painting and decorating and electrical

Don't put off necessary plant construction or repairs. Take a tip from Mr. Schwab, who is going to spend \$25,000,000 in enlarging one of his Bethlehem Steel plants. By increasing the efficiency and capacity of his works in quiet times, Mr. Schwab carries out Andrew Carnegie's original formula for business success, which is, to "Be fully prepared for the better times which never yet have failed to come to this great, growing country." Will YOUR plant be ready when business does come along with a rush?

work are more than 100 per cent. higher than 1914.

The bonus which the home builder is required to pay to the bank or building and loan company for money with which to start his project is greater than the combined profit of the brick manufacturer and lumberman on any given job. An inspection fee of \$20 was formerly charged in addition to the prevailing rate of interest on a

home building loan. Today, the bonus in addition to interest is, even on a small house loan, from three to six hundred dollars for two years' use of the money. The amount to be exacted as an additional bonus to continue the loan is yet to be determined.

To anyone familiar with the actual facts, the clay plant operator least of all deserves to be jumped on. Common brick rarely sold for a real profit. Costs in hundreds of instances were formerly unknown and brick sold at a price that ultimately necessitated the plant to quit business. The United States Geological Survey points out that in the last twenty years the number of common brick plants has shrunk in number from 6,400 to 2,000. Why this suicide?—Because there were great profits in the business? Not by any means. The public was able to buy brick at a price several per cent. below what it should have cost them, had the manufacturers known their costs and sold their products at a profit reasonable and entitled them. Thus, in making comparisons between present and former prices an allowance should be made for this situation.

We commonly read or hear reference to the "coal baron," the "lumber king," the "steel magnate," or "millionaire cement man." Fortunes have been made in all of the basic building materials except clay products. Where is the justice in a petty politician's attempt to cover himself with glory by attacking a group of manufacturers who as a class are innocent of the various accusations that have been made, or, what warrants a newspaper to publish atrocious assaults without investigation unless it be to earn the patronage of a shyster demagogue?

HERE IS ONE OF THOSE RARE STATEMENTS THAT PACK A WHOLE SOCIAL AND BUSINESS PHILOSOPHY IN A SINGLE SENTENCE. IT IS WORTH USING IN YOUR OFFICE, DISPLAY ROOMS, ON YOUR ADVERTISING, LETTERHEADS, AND PASSING ON TO EVERY BUSINESS THAT WOULD BENEFIT BY A HOME BUILDING REVIVAL.

"Now is the time to build—remember you can mortgage your home to buy an automobile, but you cannot mortgage a car to buy a home."

—From Statement Made by Deputy Commissioner Robert Knight of Chicago July 1, 1921

THREE DAYS *of* PLEASURE *and* EDUCATION *for* A. C. S.

*District Rich in Ceramic Industries Will be Visited—
Inspection of Factories of Wide Reputation on Program*

ONE OF THE RICHEST CERAMIC centers in the country will be visited during the summer meeting of the American Ceramic Society, and will include the inspection of plants at Canton, Alliance, Sebring and East Liverpool, Ohio, during Monday, Tuesday and Wednesday, July 25, 26 and 27.

Due to the central location of this district with respect to the American ceramic industry, and because of the high interest in the plants to be inspected and excellent program to be enjoyed, it is expected that this year's meeting will top all preceding summer gatherings in attendance when the initial start is made from the Hotel Courtland, Canton, Ohio, at 10 A. M., Monday, July 25.

The first trip will include a visit to the Dueber Watch Case Manufacturing Co. Special cars have been arranged for to convey the delegates to this plant from the Hotel Courtland, leaving at 10 A. M. After returning to the hotel for luncheon, a start will be made at 1:30 P. M. on special cars for the plant of the Bonnot Co., well known manufacturers of clay machinery. From this plant an option is had to visit either the Canton Stamping & Enameling Co. or the Republic Stamping & Enameling Co. Due to the limited time available, it will be impossible for members to visit both establishments, therefore, this portion of the trip will be left open to individual choice.

SPEND EVENING AT COUNTRY CLUB

At seven in the evening, the conventioners will leave via automobiles for Congress Lake. A banquet will be tendered at the Congress Country Club at 7:30 in the evening. The drive from Canton to Congress Lake is a beautiful one, over a stretch of eighteen miles of perfect brick pavements, and the Country Club is one of the finest in the United States. The cool refreshing breezes from the lake, combined with a delicious appetizing menu and exquisite service, makes this an ideal place to dine during a July evening. Besides a few very short after-dinner speeches by speakers of national reputation, there will be several unique entertainment features.

On Tuesday morning a start will be made at 9 o'clock, leaving on special cars of the Stark Electric Co. for Alliance, Ohio, where the party will be met by automobiles and taken to plant No. 2 of the Alliance Brick Co. This plant has just been completed and it will afford the members of the American Ceramic Society, an opportunity to see one of the most modern brick plants in the country. The brick are being burned in a Richardson compartment, continuous kiln, fired with producer gas.

A complimentary luncheon will be given at the Alliance Country Club by the ceramic industries of Sebring.

In the afternoon a trip will be made by automobile to Sebring, Ohio, where some well known establishments will be visited. The inspection includes a trip to the Limoges China Co., where Dressler tunnel kilns are in operation. A visit to the Sebring Pottery Co. will afford an opportunity to witness the operation of the McFall oil burning equip-

ment which undoubtedly will interest every member. While in Sebring, a visit will be made to the Strong Enameling Co.

ANOTHER EVENING OF MERRIMENT

The evening will be spent at Myers Lake, near Canton, where a theatre party will be enjoyed and later a complimentary smoker. It is rumored that the smoker will be one of those old-fashioned kind like those held in the days before the war and will include good eats, good smokes, and so forth, and members are requested to bring their best stories along.

It will be necessary to make an early start on Wednesday morning, and at 7 o'clock automobiles will convey the party to East Liverpool. At this place a visit will be made to the R. Thomas & Sons Co., High Voltage Electrical Porcelain Factory, and other chief points of interest, where oil burning kilns and tunnel dryers can be seen. After a complimentary luncheon at the Elks Club, East Liverpool, a visit will be made to two of the largest and best known generalware factories in the United States. Both the Homer Laughlin China Co. at Newell, W. Va., and the Knowles, Taylor & Knowles Co. will be visited.

The inspection of these factories will be concluded in ample time for all visitors to take the 6:40 P. M. train to Rochester, Pittsburgh and the East. At Rochester connections can be made with Pennsylvania Train No. 115 for Chicago and the West.

Several plans for the entertainment of the ladies have been made by the committee. In addition to the visit to the Dueber Watch Works on Monday morning, the banquet on Monday evening, complimentary luncheons on Tuesday and Wednesday, and the theatre party on Tuesday evening, to which the ladies are cordially invited, there will be automobile trips on Monday afternoon and Tuesday and Wednesday to various points of interest.

MAKE YOUR RESERVATIONS IMMEDIATELY

The automobile trip from Canton to East Liverpool, is a magnificent one over wonderful roads and thru beautiful country. All members within a radius of two hundred miles of Canton are urged to bring their autos in order that those coming from a farther distance may enjoy this delightful trip.

The committee has arranged for hotel accommodations at the Hotel Courtland for those who have requested same, but those who have not yet made this request, should engage hotel accommodations at once. Hotel accommodations can be secured at either the Hotel Courtland or McKinley Hotel. At the former the rates vary according to type of room, from \$2.00 to \$5.00 and at the McKinley Hotel, the rates are \$1.50 to \$6.00.

The chairman of the Summer Meeting program, Ira E. Sproat, has already received nearly one hundred acceptances and all indications point to a record attendance at this year's meeting, which undoubtedly will be one of the most enjoyable, both from an entertainment and educational viewpoint, ever held by the American Ceramic Society.

Copies of Scientific Articles Now Obtainable

The Research Information Service of the National Research Council is prepared to assist investigators by locating scientific publications which are not generally or readily accessible. It will also, as is desired, have manuscripts, printed matter or illustrations copied by photostat or typewriter. Requests for assistance should be addressed, National Research Council, Information Service, 1701 Massachusetts Avenue, Washington, D. C.



Some Bits of History About Brick

Several newspapers have recently published items containing short historical references to brick manufacture. The accounts that have been published are as follows:

"The Bible tells us of the manufacture and use of brick. The most ancient records contain references to this building material, and we know as early as the year 44 A. D. the Romans used them in England. The actual scientific and mass production of brick did not begin until 886, when Alfred the Great directed that brick be manufactured under

government supervision. History does not tell of another ruler who became deeply interested in this industry until we come to Charles I., who, in 1625, thought it necessary to regulate the size of brick so that transportation difficulties could be overcome.

"An American inventor by the name of Spence is credited with the first brick-making machine, but the British claim that one Clayton whose patent was granted in 1861, was the first to produce brick by steam at the rate of about 1,600 an hour."



Standards Committee Hold Conference

The secretary of the American Engineering Standards Committee, Dr. P. G. Agnew, recently attended a conference in London of the secretaries of the national standardization bodies. After the conference he visited France, Switzerland and Germany for a more detailed study of the standardization work in those countries. The suggestions of the conference will be submitted to the American Engineering Standards Committee for approval.



HOME BUILDING *in* BROOKLYN FAIR—SPECULATIVE WORK AWAITS WAGE CUTS

WITH BRICK MANUFACTURERS forced to pay war time prices for coal and predicting that the 1921 low brick price has been reached and passed, building material dealers cutting the price of Portland cement to consumers 20 cents a barrel and with metal prices slipping, the second half of the building year begins without much stability, says the Dow Service daily building report of July 2.

Hollow tile prices have been reduced and so has the dealer quotation to the consumer on neat wall cement which has been lowered by one dollar a ton. On the other hand, lumber prices, as far as the run of the market is concerned, seem to be more uniform.

Indeed, this material, together with glass, certain finishing material like white tile, marble, some oils and certain other building commodities that have been in competition with foreign products of similar nature may be expected to attain to more stable market behavior, under the new tariff schedules.

MUST PAY HIGH COST FOR COAL

Common brick was selling in the wholesale market at the week-end at \$15 for the best grades. Here and there it was reported by some of the dealers that they had been able to purchase "run-of-market" brick at \$14, but not everyone was able to obtain this material at the low price.

Manufacturers say they are obliged to pay war time prices for coal with which to burn the brick they are now manufacturing. This is ascribed as their reason for believing that those who are holding off brick purchases in the hope that when the 1921 brick begins to arrive in any quantity they will be offered at prices below \$14-\$15 wholesale, will be disappointed.

Brick buying at the week-end was active enough to warrant a price of at least \$15.50 a thousand, wholesale, for the best grades of brick, especially since production and towage costs have not shrunk as in other lines.

If past performances in building construction may be depended upon and the rate of development in building material movement continues the next few months should offer

the building trades of New York a much larger volume of business than a similar period prior to the present offered.

Wholesale buying seems to point to this conclusion, in all departments excepting lumber, which has been rather over-stocked and has been moving slowly until the last thirty days or so. There are evidences to be found in current inquiry to show that railroad purchasing is soon to be resumed on a moderate scale.

SPECULATIVE BUILDING STILL HOLDS OFF

Speculative building construction awaits wage cuts and a further shading in building materials which have dropped since last year's peak about 30 per cent. counting the latest price cuts. Brooklyn, however, is showing a turn-away from a policy of procrastination, as far as individual home building is concerned. While the professional speculative builder is frankly holding back for further meagre price cuts, the individual builder is now satisfied that with all the pressure applied upon manufacturers and distributors alike, any further price cuts, if made, would hardly warrant waiting for in view of the lateness of the building season and the probability that any excessive demand would quickly result in a readjustment upward of prices.

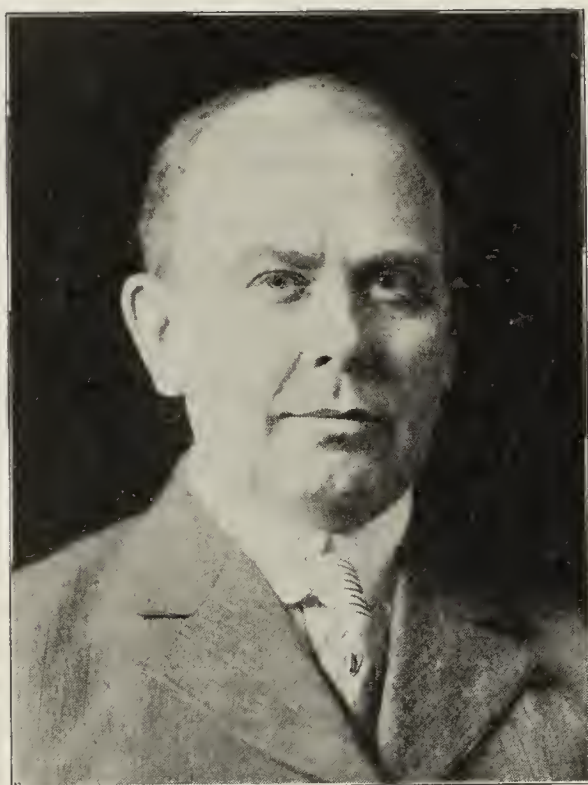
Metal price reductions are due to scarcity of orders. Mill operations continue to be at low level and more mills were scheduled to close the first of this month. Prices are weak even at the reduced figures now being quoted on steel sheets. Many mills have not been soliciting business except for material they could ship before the first of July, or that can be delayed until mill operations are resumed. Further price adjustments are expected in this department.

The price cuts in Portland and neat wall cement that were reported recently are not manufacturers' reductions, but are due to the eagerness of the dealers to win what business is just now coming out in this market. In the prepared roofing department manufacturers announced that new price schedules issued on June 13, were subject to a further revision downward effective as of June 29.

Death Comes to One of Industry's Leaders

Deep sorrow, we are sure, far from expresses the emotion that will grip the hearts of our readers as they learn the sad news of the death of one of the clay industry's most important figures. The passing away of George H. Tefft, which occurred at 8 o'clock Thursday evening, July 7, was certainly a distinct loss to the industry.

Mr. Tefft was born in Springfield, Mo., and was the son of a much beloved practitioner of that community. He started to work in the banking business and at one time was connected with the sales department of one of the packing houses in Kansas City, Mo. Mr. Tefft later became connected with the



GEORGE H. TEFFT.

Walter S. Dickey Clay Manufacturing Co., large producers of sewer pipe, and also was secretary-treasurer of the International Clay Products Bureau, a body that was instrumental in the promotion of burned clay sewer pipe. The latter organization, together with others, was merged into the Clay Products' Association about five years ago, and headquarters maintained in Chicago. Later, a joint arrangement was made with the Eastern Sewer Pipe Manufacturers' Association, and Mr. Tefft became secretary-manager of both organizations with an office in Chicago and one in Pittsburgh.

All these years Mr. Tefft has put forth energetic effort devoted to pushing his obsession—the promotion of burned clay sewer pipe. In fact, he was so much engrossed in his work that he neglected rest and recreation, which many of his friends believe was the cause of his illness. He was ill but a short time, the doctors diagnosing his case as sleeping sickness.

In his death the clay industry—especially the sewer pipe industry—loses one of its staunchest supporters and his loss will be mourned by the entire craft.

* * *

First Half 1921 Building Best in Five Years

Construction activity in June, according to figures published by the F. W. Dodge Co., was 6 per cent. less than in May, altho it was greater than in April. Contracts awarded dur-

ing June in the twenty-seven Northeastern States of the country amounted to \$227,711,000.

Those sections in which labor troubles have been most pronounced were the ones in which decreased building activity was evident. Furthermore, the latter half of June showed up more strongly than the first half. The two facts seem to indicate that the small decline in June was only a temporary setback.

Included in the June total were the following items: \$75,175,000, or 33 per cent., for residential building; \$52,967,000, or 23 per cent., for public works and utilities; \$25,493,000, or 11 per cent., for business buildings; \$23,441,000, or 10 per cent., for educational buildings; and \$18,502,000 or 8 per cent. for industrial plants.

The first half of this year has shown up quite favorably in comparison with previous years. From January 1 to July 1, the total amount of contracts awarded has been \$1,066,256,000. This figure is 9½ per cent. greater than the average semi-annual total for the preceding five years.

Included in the total for the first six months of 1921 were the following items: \$360,828,000, or 34 per cent., for residential building; \$242,701,000, or 23 per cent., for public works and utilities; \$144,488,000, or 13½ per cent., for business buildings; \$104,194,000, or 10 per cent., for educational buildings; and \$86,940,000, or 8 per cent. for industrial buildings.

Contemplated new work has been reported during the first six months of this year to the amount of two and a half billion dollars.

June was a month of price and wage adjustments. Pending these adjustments the public has maintained an attitude of hesitation about going ahead. There are certain advantages in building now, especially in those localities where wages have been substantially reduced.

A stronger feeling of confidence is the principal element needed to encourage increased activity in the remaining summer months. While there is in evidence a tendency to hold up building operations till the fall, there is a good chance that July will be a month of somewhat greater activity than June.

In 1919 60 per cent. of the year's total construction activity occurred in the second half of the year. Thus far this year activity has kept somewhat ahead of 1919. If it continues to do so, the remainder of this year should show 50 per cent. more activity than the first half has shown. There are numerous indications that something like this may happen.

* * *

Cleveland to Have Mammoth Show

Plans for the American Building Exposition, the largest building show ever held in the United States, were being perfected this week, following assurance that work on the Public Hall, Cleveland, Ohio, where the exposition will be held, will go steadily ahead until completed. Meeting of executives of the incorporated company was held this week to discuss the plan of the exposition, which has been completed by architects.

Richard B. (Dick) Collier, who has been associated with previous similar enterprises, has been appointed assistant managing director of the exposition, and will have active charge of the arrangements. Mr. Collier was active in the work of the First Complete Building Show, held in Cleveland in 1916 under the supervision of Ralph P. Stoddard and "Bob" Mitchell. Mr. Collier also directed the building show held at the Grand Central Palace in 1917.

The 1921 enterprise will surpass any previous efforts, however, which fact is best indicated by the announcement that architects have planned for not less than 250 exhibit spaces, and perhaps as many as 300, which would make this event twice as large as the show held in Cleveland in 1916.

BURNING BRICK *in* PORTABLE KILNS

New System for Producing Common Brick Based on Chicago Method is Evolved—Remodeled Plant Makes a Huge Saving on Production Costs

By W. W. Dickinson, Jr.

Superintendent, Arkansas Brick & Tile Co., Little Rock, Ark.

IT IS SAID that necessity is the mother of invention. The truth in that proverb has recently been proven by our own experience. We had—and still have—four brick plants. The cost of making brick on these different plants varied widely. One plant kept on making brick cheaper than the others, and this despite the fact that it paid on an average of thirty per cent. more for labor than did any of the other plants. After three years of study it was decided that if the cheap plant were to make all of the brick, that the saving on the operating cost would be more than enough to pay for the additions and improvements to the most economical plant that would be required to give it a capacity greater than the combined capacity of the four plants.

With this decision definitely made, the work of enlarging the plant was ordered done. Everything was gone into to the smallest detail. A plant of 300,000 daily capacity was required.

The fifteen up-draft kilns that were on the plant were in

very bad repair, and the cost to put them in number one shape and to build fifteen more was so great that it was decided to tear them all down and put up a "Chicago shed" and a setting machine of our own design, which automatically closed up any loose setting or openings between the tiers which were left to facilitate the drying. This same machine can be used for taking the burned brick from the kiln and loading them on trucks or wagons.

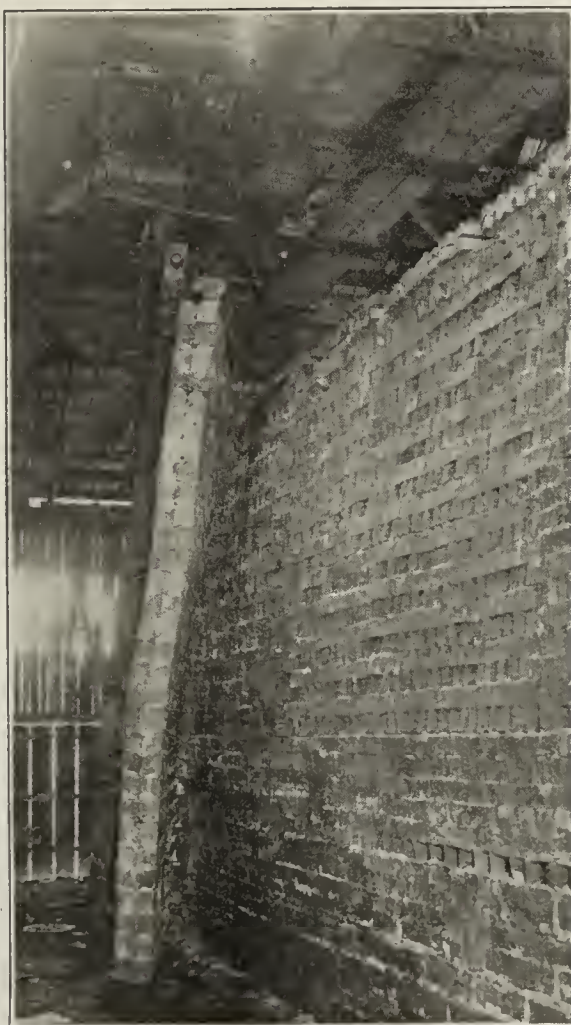
MAKE MANY IMPROVEMENTS

The kilns were torn down and the "Chicago shed" put up, with the traveling crane running the full length of same. The shed was made seventy-eight feet high, forty-seven feet wide and 1,200 feet long. The crane is an eight-ton overhead traveling crane made by the Toledo Bridge and Crane Co.

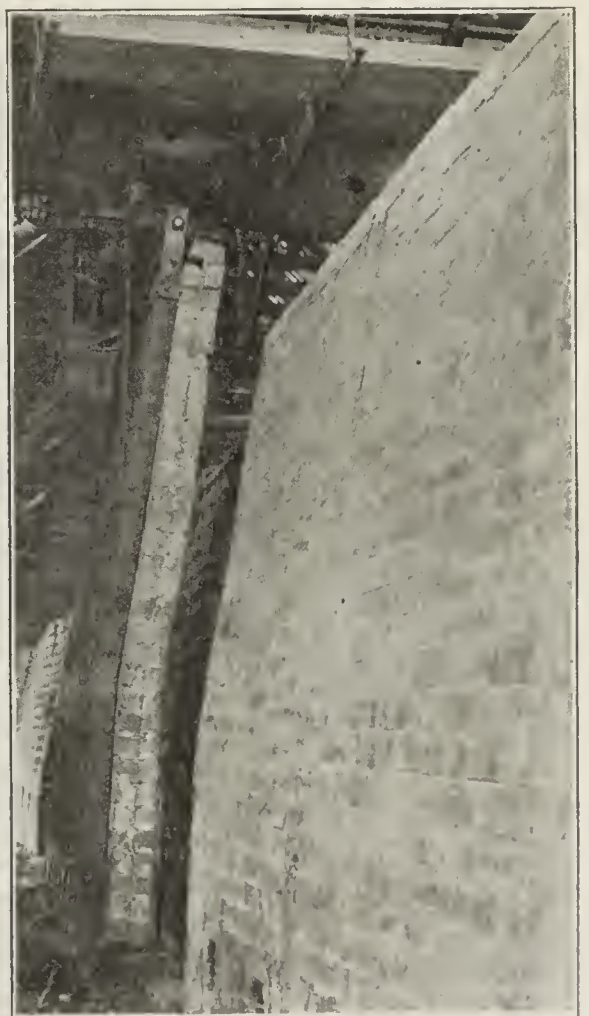
In remodeling the plant there were quite extensive improvements made and the character, together with the names of firms furnishing machinery and equipment, are as follows:



Showing Back View of Machine Holding Section of Portable Kiln. Machine is Suspended from Crane.



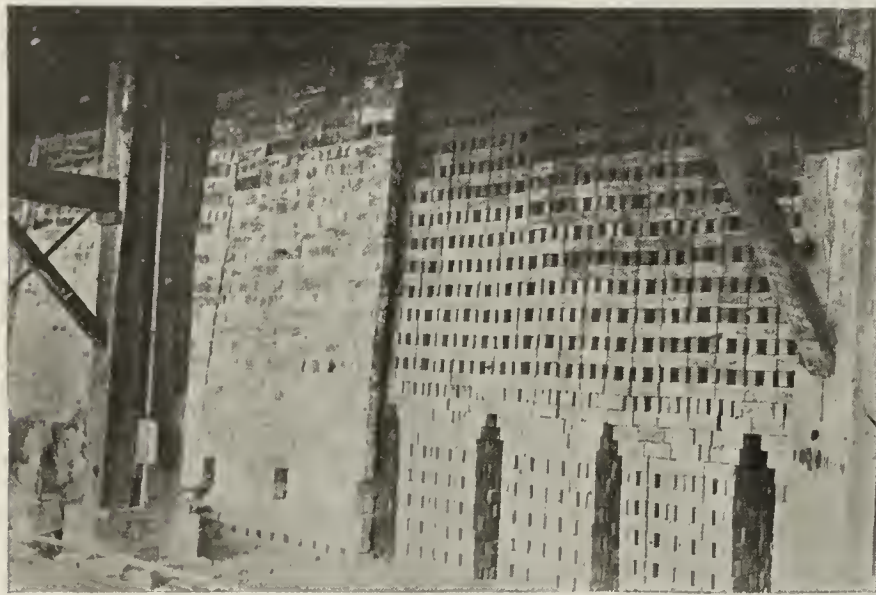
View of Brick Setting and Machine in Act of Placing Portable Section Enclosing Setting.



This View Shows Part of Portable Sections in Place and Machine in Act of Setting Another Section.

Two miles of thirty-six-inch gauge railroad laid with fifty-six-pound rails, 800,000 cubic yards in fill and rock ballast. Two eighteen-ton H. K. Porter 9x14 locomotives. One new 35 B Bucyrus revolving steam shovel. One and one-fourth yard dipper shovel. Eighteen four-yard Oliver two-way dump cars, made by Wm. J. Oliver Manufacturing Co., of Knoxville, Tenn. One No. 18 Sirrocco fan, made by the American Blower Co. of Detroit; this fan delivers 150,000 cubic feet of air a minute at 300 degrees, requiring 62½ B. H. P. to operate. One eight-ton overhead traveling crane, made by the Toledo Bridge and Crane Co., of Toledo, Ohio. One spiral clay feeder, made by Chambers Bros. Co., of Philadelphia. One triple electric transfer car, made by the Lakewood Engineering Co. of Cleveland, Ohio. A complete overhead gravity system of returning the empty dryer cars to the brick machine. The haul-up part of this overhead system, which was furnished by the Jeffrey Manufacturing Co., lengthened out our thirty-three-tunnel dry kiln forty-seven feet. This gives us a dryer of thirty-three tunnels, 162 feet long, and a drying capacity of 300,000 brick in twenty-four hours. The heat from the smoke stacks of the boilers and from the cooling kilns is used for drying the brick. The No. 18 Sirrocco fan is used for forcing the heat into the dryer, and two ninety-six-inch Sturtevant fans are used to take the moisture from the dryer.

A system of conveyors run from the kiln shed to the dry pans and from the dry pans to a bin over the granulator where the clay feeder feeds the ground bats into the clay as it leaves the granulator. The clay feeder is driven from the drive shaft of the granulator so that when the granulator is stopped the clay feeder stops, and vice versa, but the dry pans can run on, as the bin over the clay feeder holds twelve cubic yards.



This View Shows Part of the Portable Kiln Sections in Place and Setting With Arches Provided for the Burning.

Under the kiln shed we were using the regular Chicago method of scoring the kilns with nine-inch burned brick and daubing the kiln. When we started shipping out the scoring with the brick we ran into trouble. Everyone objected to the mud of the scoring brick. They simply would not have



Looking Over Top of Kiln Showing Crane and Upper Part of Machine Used for Moving the Sections of Portable Kiln.

them. Consequently, we were up against the proposition of setting aside the scoring brick. This was expensive, both as to labor and brick, for the scoring brick became dead after being used two or three times, and then the breakage would run as high as 30 per cent. The daubing was very unsatisfactory in cold weather. The men—you could not blame them—did not like to put their hands in the daubing when frost was on the ground.

PORTABLE KILN BORN OF NECESSITY

Right here is where the portable kiln was born. We had to get away from the scoring and could not use the permanent kilns under the shed because it was not wide enough to allow for the kiln walls unless we cut down the width of the kilns. But when we did that, the holding capacity of the kiln was reduced greatly. The crane did not have to work all day to set the brick, so it was decided to let it move the scoring after finishing the day's setting.

Then came the idea of making the scoring solid so that the crane could move it without having to tear it down and rebuild it every time. Some experimentation with heat resisting cements was done and one was found to be of a type that we want. The next thing to do was to do away with the crack where each section of scoring joined the other and some means to allow for expansion and different lengths in kilns of the same number of arches, as it is almost impossible to set two kilns the same width and length. To offset all of these things, the present kiln which we are using was designed, and we now have three of them and are building the fourth, which will be all that we need.

The present kiln is made in panels of two arches to each panel, and all panels are made of 5¼x9¼x19¼-inch fire clay blocks. The top of the block has a tongue 1x1 running full length, and the bottom a groove 1¼x1¼, running full length. The blocks on each end of the panels have a four-inch rabbit joint like the common shiplap siding used in the construction of concrete forms or houses. This rabbit joint does away with the crack, allows for expansion and the variation in the length of the kilns. With this four-inch joint the kilns—twenty-two arches each—can vary twelve inches in length and eight inches in width and not cause any trouble.

CRANE CAN MOVE PANELS SAFELY

The blocks are first laid up around a kiln of green brick. They are laid up with H. W. Johns-Manville heat cement No. 26. This cement has great cementing qualities and vitrifies at 900 deg. F., but does not burn out until it reaches 2,600 deg. F. When the kiln is burned the first time this cement vitrifies, and we have a solid panel of two arches, the full

height of the kiln. Now the panel can be moved with perfect safety by the crane.

The kiln proposition is now a simple matter of taking down and putting together again like putting up an Aladdin ready-cut house. Each panel is numbered, and when put together again around another pile of brick makes a new kiln. The more it is used the better it gets. After two burnings the inside of the panel is daubed with H. W. Johns-Manville heat cement No. 32. This cement acts like a glaze and protects the blocks and mortar joints and seals all fine cracks, and the brick in the kiln burn to the very outside courses. The side of the panel facing the kiln should be treated with No. 32 cement three times.

The handling of the panels with the crane is done with the same crew which set the brick. It keeps the kiln shed clean, as there are no bats nor any mud. The panels are kept right up with the setting every day.

LOAD 12 WAGONS FROM ONE KILN

This moving all the scoring—portable kiln—away from around the burned brick allows the loaders to load from any part of the kiln and allows wagons or trucks to be loaded from any point. It is possible to load twelve wagons at the same time from one kiln. By using the portable kiln, it is necessary only to have just enough kilns in which to do your burning, and this is all you need for a kiln anyway. You do not need kilns for storage. Here is where the portable kiln reduces the investment, for just as soon as the brick are burned and cooled a portable kiln is ready to go on the next setting. It does not have to wait to be emptied. It moves on and leaves the burned brick standing under the shed to be loaded out at your own convenience. There is no rush to get a kiln empty and ready for the setters.

The portable kiln can be used as a common up-draft kiln or as a continuous up-draft kiln. When used as a continuous up-draft kiln, flues are set with the setting machine so that the fire can be drawn ahead thru the next kiln. The kiln may be connected with a waste heat flue, and a fan drives the heat from the cooling brick for drying.

We are now arranging the kiln for continuous burning

and connecting the kiln to use the waste heat for drying. This will give an ideal arrangement and should more than cut our fuel bill in half. The kiln may be fired with natural gas, oil or producer gas. We are using natural gas. Some experimenting with automatic coal stokers will be tried this summer. The patents have not yet been issued on the stoker firing.

UPKEEP REMARKABLY LOW

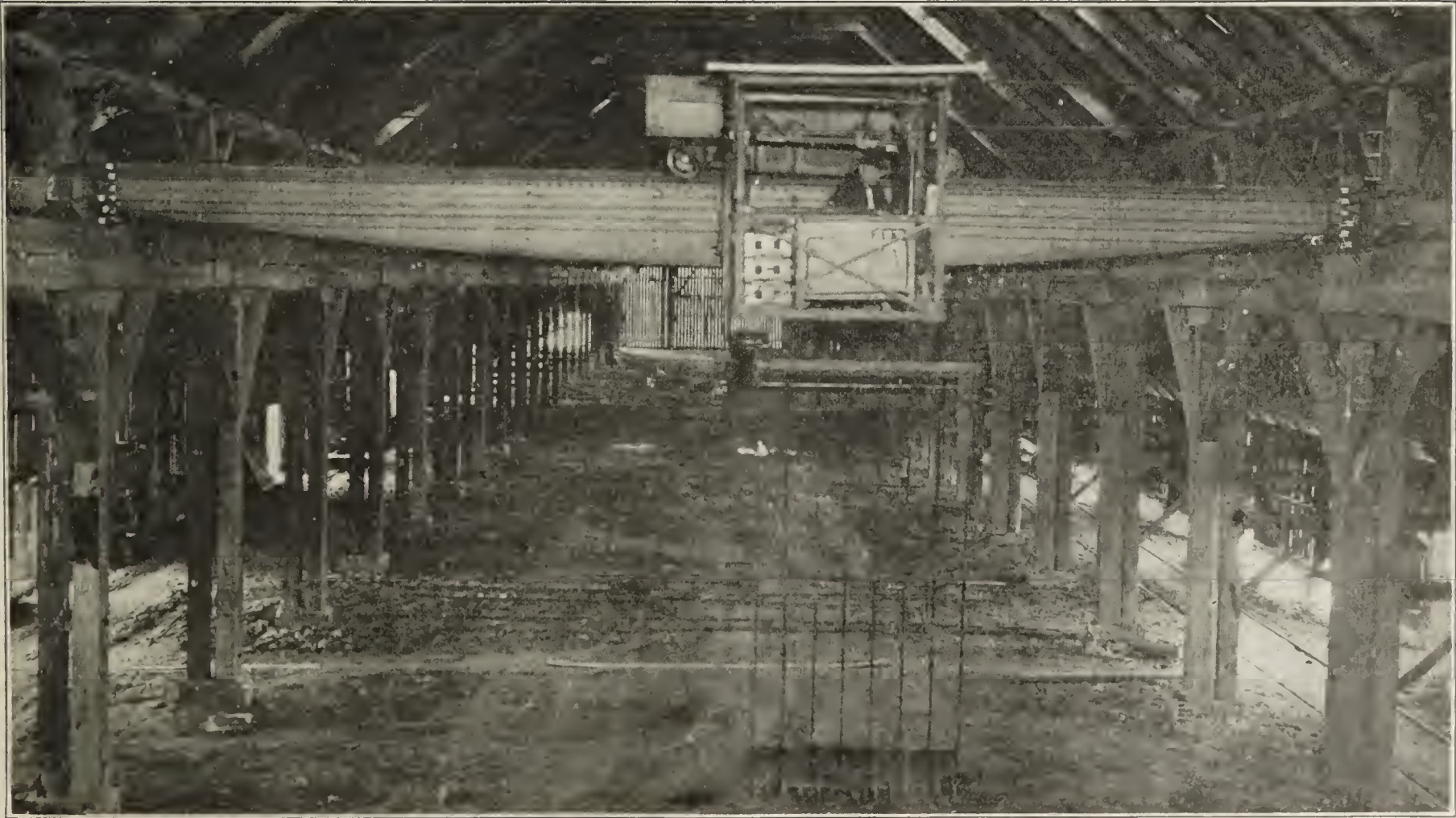
The cost of the portable kiln and kiln shed and crane, as compared with other types of kilns of the same capacity is less than one-half, and the upkeep on the portable kiln and shed is less than one-fifth than that of permanent kilns. The fuel saving is considerable as compared to the up-draft or straight down-draft kiln, since the fire is all in the kiln and the walls are absolutely air tight. With the crane "double coal" brick should be set around the outside and as the top eight courses. This will cut your burning time two days and will save 25 per cent. of your fuel costs. This setting of "double coal" brick can be done in any kind of kiln and is not claimed as an advantage of the portable kiln.

From a mechanical setting standpoint, the open shed setting is the cheapest and easiest. More brick can be set with the crane than can be set in portable kilns, and better setting can be done than can be accomplished in permanent kilns.

COST OF PORTABLE KILNS

A running foot of kiln shed complete costs \$45 and in our case holds 7,000 brick. The cost of shed, crane, transfer, setting machine and portable kiln, is as follows:

1,200-foot kiln shed, at \$45 a foot.....	\$54,000
Traveling crane put on runway.....	10,250
Electric transfer	2,700
1,200-foot transfer track, \$2.50 per foot.....	3,000
3 portable kilns, at \$7,000.....	21,000
Hook for moving portable kiln.....	2,500
Electric wiring	3,000
Grading shed	1,500
Total	\$97,950



View of Kiln Shed Which Shows Empty Machine Suspended from Crane. Mr. Dickinson is Shown Sitting in Cab.

Permanent kilns of capacity for 8,400,000 brick, with necessary roofs and transfer tracks, would cost alone \$200,000 to \$280,000. With a portable kiln on a 250,000 capacity plant the saving would be the difference between \$200,000 and \$97,950, at the lowest figure, which is \$102,050. If kilns cost \$250,000, then the saving would be \$182,050. Figuring depreciation on kilns and roofs at ten per cent. a year, then the

portable kiln would save every year in depreciation from \$10,205 to \$18,205.

We think that the portable kiln, together with its adaptability with the setting machine, is going to revolutionize the brick business. It certainly marks a long step forward in brick plant construction. Incidentally, this one plant is now producing brick at an exceedingly low cost.



MOVING PICTURES *to* PORTRAY PAVING BRICK MAKING, LAYING *and* ROAD DURABILITY

HOW PAVING BRICK are made, and how good brick roads are built are facts known to few of the hundreds of thousands who daily use the roads of the country. But, in the belief that information on these two vital subjects to the nation's welfare will prove beneficial alike to the community and the individual, the Bureau of Public Roads is about to launch a campaign unique in the annals of the paving industry.

In process of formation is a motion picture film which will show every angle of paving brick manufacture and the use to which the material is put, in a 1,000-foot story that will be sent to all parts of the United States.

First views of the series have been taken, and about 1,200 feet of film used. A little less than half of the material yet to be used will be taken later in the summer, and it is expected the completed film will be ready for distribution with the arrival of fall.

FILM WILL HAVE WIDE DISTRIBUTION

The film, when completed, will be recognized as the official publicity of the Bureau of Roads. It will be shown in colleges, before engineering societies, chambers of commerce and similar civic bodies. Cooperating in the making and distribution of the film is the National Paving Brick Manufacturers Association, which will assist the Bureau in framing a lecture to go with the film, for use in technical schools and similar institutions. It is more than probable that the national association will take several copies of the film, planning a circuit for each, and thus aid the Bureau in preaching better roads to those who can help make better roads.

Both the Bureau and the national association are considering introducing the film in the better motion picture theatres of the country, so that the general public, the principal users of the roads, may gain a first-hand impression of the importance of road material and construction. This feature will be considered as the time for completion and distribution of the film draws nearer. In any event, these films will be working for better roads constantly, once the exhibiting is under way.

First half of the work has been completed. Brick plants in the Middle West were used as examples of good paving brick manufacture. Operatives in the different establishments were coached and rehearsed several times, in order that a perfect reproduction of brick manufacture might be obtained.

SUBJECTS COVERED BY FILM

Subjects already covered include general view of brick plant, dry pans, pug mill, forming and cutting, hacking and drying, transferring and setting, views of various kilns, firing kiln, grading brick after drawing, finishing subgrade with use of template and rolling, laying brick, view of completed road with traffic.

The interesting subjects yet to be taken include such

activities as construction of concrete base and curb, rolled base construction, including spreading stone, rolling and filling stone, completing the base; sand cushioning, depositing and striking; rolling brick, monolithic construction, culling and testing surface, grouting with cement filler, covering completed surface, pouring and distributing bituminous filler, sanding surface, closeups of different types of brick.

It is probable that the series will be supplemented with other views, notably to contrast the good brick paved road and the bad or unpaved road. Incidentally there are two or three stretches of unpaved road not far from Cleveland, Ohio, and it may be that these will be used to demonstrate what a road should not be. The motion pictures will be able to show motor cars, and occupants, being buffeted about on this bad road, which may prove exceedingly humorous—to those watching the film.

The filming is being done by Clifford Shoemaker and John Hillers, of the United States Bureau of Public Roads, and Eugene Tucker and Mr. Kelly, of film division, United States Department of Agriculture, assisted by Maurice B. Greenough, secretary, the National Paving Brick Manufacturers Association.



Wages in the U. S. and Foreign Countries

A booklet giving information on wages paid in the United States and foreign countries has just been issued by the government printing office at Washington. The booklet was compiled for the House Ways and Means Committee, and contains among other information average wages in the brick manufacturing industry in 1919. The figures given are compiled from reports of thirty-five establishments, with 1,803 employees, and are as follows:

	Average hours per week	Average earnings per week
Brick machine tenders	53.4	\$24.75
Kiln firemen	66	27.65
Kiln setters	42	22.46
Laborers	46.2	17.75
Puggers	47.4	20.26



Had Been Punished Enough

Before Police Magistrate E. M. Hough, in Allegheny police court recently, there appeared a man whose face was vaguely familiar. The prisoner on being quizzed denied that he had ever been in court before.

"I've seen your face before," declared Hizzoner.

"I worked on your brickyard for two days, but the job was too heavy. I hope you are not as hard as the brick in your plant," was the explanation offered.

"Discharged," quoted the magistrate.

HANDLING OVERHEAD *by* UNDERHAND METHODS

*Proper Distribution of Overhead in Good and Bad Times
—Charging Idleness to Proper Department—Create Sur-
plus in Good Times to Bridge Period of Bad Times*

By G. W. Greenwood

Treasurer, United Refractories Co., Uniontown, Pa.

A BRICK PLANT with a capacity of 10,000 a day finds that when it runs a full day its expenses amount to \$200. But if it is idle for a day, the expenses amount to \$20.

On Monday, July 12, 1920, it started up and ran for twenty-six consecutive working days, of which, of course, eighteen were in July and eight were in August. The books for July and for August showed the following:

July—

18 days, at \$200.....	\$3,600.00
13 days, at \$20.....	260.00
Total cost for July.....	3,860.00
Cost per thousand (divide by 180).....	21.56

August—

8 days, at \$200.....	\$1,600.00
23 days, at \$20.....	460.00
Total cost for August.....	2,060.00
Cost per thousand (divide by 80).....	25.75

The cost in each case is obtained by dividing the month's operating expenses by the output, which, according to the prevailing cost systems is the way to obtain true costs. But it is not. An orthodox cost system will give the same cost per thousand for July and for August.

Suppose the plant had started up on July 2, taking a holiday on July 5, so that the last of the twenty-six working days fell on August 2. Our figures in this case would stack up thus:

July—

25 days at \$200.....	\$5,000.00
6 days at \$20.....	120.00
Total cost for July.....	5,120.00
Cost per thousand (divide by 250).....	20.48

August—

1 day at \$200.....	\$ 200.00
30 days at 20.....	600.00
Total cost for August.....	800.00
Cost per thousand, (divide by 10).....	80.00

Of what use are these results? The first is deceitfully low, and the second is preposterous. A selling price based on the first would be unfortunate, and on the second would be impossible.

When one is asked of what use are such erratic costs, he is told that altho the separate months must needs be taken with many grains of salt, yet by combining the figures for several consecutive months one gets a reliable average cost.

HOW TO GET AVERAGE FIGURE

If so, what is the average of the two months above, namely, of the \$20.48 and \$80.00 prices? Is it \$50.24. By no means. One must discard them entirely, and divide the sum of the

expenses for the two months by the sum of the output for the two months. That is, we divide \$5,920.00 by 260, giving \$22.77. So that, IF—notice the “if”—the \$20.48 and \$80.00 are true costs for the two months, then they are little, if any, use taken separately, and must be carefully manipulated before using combined for any purpose.

Those who feel that monthly quotients—usually called costs—are not to be accepted apart from several preceding months, would be as well off by taking costs every six months. In fact, they would be better off.

What happens to one's “cost per thousand” when the plant is closed down for an entire month, and he has no output by which to divide the inevitable expense? Possibly he tries to forget these periods.

I once asked the head of a large brick company what use he made of costs for a month when the plant was running only fifty per cent. He replied, “I never look at them.”

WONDERFUL EXAMPLES SET BY ANCIENTS

We cannot admire too much the achievements of the ancients. Without machinery, they constructed immense buildings and handled massive stones. Without scientific instruments, they made great progress in astronomy and physics. Without a decimal system of calculating, they accomplished wonders in geometry. Of poetry, dramatic art, logic, and ethics, they laid the foundations. It should not surprise us to find them laying the foundations for modern cost accounting as well. Consider the following account:

“The seven good kine are seven years; and the seven good ears are seven years; the dream is one. And the seven thin and ill favoured kine, that came up after them, are seven years; and the seven empty ears, blasted with the east wind, shall be seven years of famine.”

“Let Pharaoh do this, and let him appoint officers over the land, and take up the fifth part of the land of Egypt in the seven plenteous years. . . . And that food shall be for store to the land against the seven years of famine.”

Now contrast this advice of Joseph with the following extract from a pamphlet recently published by the Fabrication Production Department of the Chamber of Commerce of the United States, on the distribution of overhead expenses in good and bad times:

“. . . in time of unusual production—production exceeding normal—the overhead should be more than used up in costs, and a surplus (reserve?) out of overhead cost created to take care of those years when the output is below normal and the overhead charges not fully absorbed in the costs of that year.

CORRECT FIGURING MUST BE BEGUN

"Thousands of firms went thru the recent years of full-blast operation upon a basis of overhead distribution essentially unfair to them. A start in the right direction must be made, and upon such firms is urged the consideration of adjusting overhead charges on the basis of a normal year, and it is so suggested, both as an advance in sound cost accounting and as a measure to facilitate that business revival we all desire, need and anticipate."

In other words, many firms whose business was unduly stimulated during recent years, should have been reading the story of Pharaoh's dreams and of their interpretation by Joseph.

What is the object of cost finding anyway? Not as a basis for making selling prices, surely, because the brick are frequently priced and the order booked before they are made up at all; so how could the selling price be based on the cost?

COSTS THAT MEAN NOTHING

Possibly one takes the "average" selling price for all classes of fire brick, found by dividing their total nine inch equivalent into the net amount of the sales. (N. B.—This quotient does not mean anything), and then he takes the "average"—the "true"—cost, found by dividing the month's total operating expenses by the output in green brick (with a deduction of five per cent. to cover subsequent breakage), and if the former is greater than the latter, the manager is contented.

Unfortunately, this security is too often more fanciful than real. Suppose the plant is only running part time. The "true" cost is then high. If the management attempts to sell the product so as to show a profit over these figures, it sells few brick, if any. Then it runs less than ever, and its costs go up still higher. The corresponding selling prices go higher yet. What is the result? If the management does not have a monopoly, and does not want to go out of business, there is but one thing to do: to make a price based on what the material *should* cost, running at a normal rate, and then sell enough to reach that mark—or accept the loss.

MODERN COST ACCOUNTING

Consider the railroad situation at present. Building and road making are lagging because of the high cost, to which the freight rates, with their cumulative effects, contribute very materially; and the railroads cannot reduce freight rates because the volume of business has fallen off!

To find a remedy, one is literally driven to take refuge in modern methods of cost accounting; to set a more or less arbitrary production mark (less than full capacity, of course), and to figure as carefully and as accurately as possible what it would cost to make brick if one were to run at this rate. As a rough illustration, take an estimate of 200 days a year. Then the estimated time-measured elements—taxes, insurance, salaries, etc., all the elements measured by the clock and not by the output—for an entire year are to be divided by 200. Then the estimated cost of standing still for 165 days is also divided by 200. To the sum of these is to be added the cost of a day's run—raw material, fuel, supplies, human energy,—and the total is to be divided by the estimated run per day. Of course the estimated breakage is to be added also. On this standard, or normal cost, prices are based.

HOW RESERVE ACCUMULATES

Let us make a simple application of these principles to the first problem. If the superintendent ran the plant as many days as he was given production orders for, and if he made the stipulated amount 10,000 each day, and if the cost of each day's operation were \$200 when they ran and \$20 when they were idle, then the superintendent deserves credit for having operated the plant efficiently. And this is true, whether the

plant ran eighteen days, or only one during the month of July.

But on the basis of 165 idle days annually, at \$20 per day, and 200 full days of 10,000 each, at \$200 per day, we have an estimated cost of \$43,300 for 2,000,000. This gives a standard cost of \$21.65 per thousand. If one were going into the subject to any extent, the method of handling breakage would have to be covered. The standard cost of 18,000 made in July at \$21.65 amounts to \$3,897. The actual operating expenses were \$3,860 showing a credit of \$37 to the reserve account. This is due to the fact that the eighteen days' operations absorbed 14.85 idle days, or 1.85 days more than were actually encountered in July. At \$20 per day, this amounts to the difference of \$37.

CHARGE IDLENESS TO PROPER DEPARTMENT

Applying the same process to August, we have as the standard cost of 80,000 brick at \$21.65, the sum of \$1,732, which is less than the actual operating costs (this has no reference to costs *per thousand*, but refers to the total costs of operation—or of inoperation) by \$328. The reason for this is that the eight days operating absorb 6.6 days of idleness, at \$20 per day, or \$132, whereas there were twenty-three idle days amounting to \$460 making a deficit of \$328.

If this idleness is due to a lack of orders, this loss is chargeable to the sales department; not to the operating department. The operating department is chargeable with a loss only when it fails to turn out brick at the standard rate of 10,000 per day, at a cost of \$200 per day, or fails to stand still at a rate of \$20 per day. This is true whether the plant runs every day, or one day in a month. Of course the operating department is to be charged with idleness due to breakdowns.

This is a brief sketch of the method of applying modern, up-to-date accounting to a modern, up-to-date brick plant. The outline is necessarily brief and incomplete; but in this direction unquestionably lies the intelligent and profitable application of cost accounting to brick making.



Even the Fight Affects Building

Almost anything is being used as an excuse for deferring building at the present time. This is shown by the situation in the New York construction market. According to Allen E. Beals, of the Dow Service, home builders are waiting for a chance at the two million feet of lumber used in the temporary stadium where the Dempsey-Carpentier fight was staged. However, much of this timber is not suitable for residence construction and the probability that the stadium will be maintained for a considerable time to accommodate other athletic events does not seem to make any difference.

It is considered more unlikely that the great amount of lumber used in this stadium will not be made available even to second-hand material dealers until the 1921 building construction is so far advanced as to make the waiting policy futile.



Accurate Control of Cost Figures

The National Association of Cost Accountants has recently published a small booklet on "Cooperation and Cost Control," written by John W. Robinson, C. A., general secretary, Thomas A. Edison Industries, Orange, N. J. The article is a comprehensive treatment of the control of cost accounting, the value of cost figures and how to ascertain whether your cost figures are correct. The book can be obtained from the association headquarters in the Bush Terminal Building, New York City.

USE *of* TRAILER

SAVES MOTIVE POWER



Application of the Trailer and Semi-Trailer in the Clay Products Industry for the Distribution of Clay Ware

By Gilbert I. Stodola

AS IN OTHER LINES, the brick and clay industry is every day more fully realizing the great superiority of the motor truck over the horse-drawn vehicle. The far wider radius of operation of the motor vehicle, its greater dependability, its advertising value in proclaiming its user as progressive and modern, and its ability, in most cases, to lower the actual unit cost of transportation of clay products, give the motor-equipped firm a distinct advantage over its competitors who are still using the age-old method of hauling by "old Dobbin."

It must be remembered, however, that the introduction of the motor truck is comparatively recent and as time goes on transportation engineers and others are finding new and better ways of increasing the efficiency of the motor vehicle and consequently reducing transportation costs.

USE OF TRAILERS FAST INCREASING

One of the most important adjuncts of the motor truck which has appeared during the past ten years—if indeed not the most important—is the trailer. The possibilities of these auxiliary vehicles have received much study and altho the trailer industry is still young, the use of trailers in numerous lines of business is steadily increasing, and in some, in fact, has worked what might be regarded as revolutionary changes in transportation methods.

Reduced to its simplest terms, a trailer is merely a two-wheeled or four-wheeled vehicle intended to be operated in connection with a motor truck, automobile or road tractor, and especially designed and built for that purpose. The last phrase is important, for it is upon the adaptability of the trailer to its particular purpose that its efficiency largely depends. This was soon discovered when the idea of the trailer was first put into practice in connection with motor vehicles.

WAGONS WERE SOON DESTROYED

Naturally ordinary wagons were used. Altho they had done very well when drawn by a horse, at a maximum speed of

perhaps four to six miles an hour, it was found that they were quickly racked to pieces when towed by the faster-moving motor conveyance, as their parts were not constructed to withstand the jarring and bumping resulting from the swifter pace. As a consequence the modern trailer is equipped with solid or pneumatic rubber-tired wheels; ball bearings and other anti-friction devices; steering knuckle axles with the tie-bar linked to the draw-bar; and other features especially designed to enable it to operate efficiently with the motor vehicle which tows it. Other points worth mentioning are the spring devices in the drawbar, which are intended to take up the jar of sudden starting and stopping, and the specially relative construction of wheels, axles and draw-bar, by the help of which the trailer is able to track smoothly after the towing vehicle and turn corners without wobbling or overturning.

THE PRINCIPLE OF THE TRAILER

The principle of the trailer is based on a long-known scientific fact; that considerably less power is required to draw or haul a load than would be necessary to carry it. Hence, instead of piling the load on the horse's back, we put it into a wagon and let him haul it; instead of building a locomotive large enough to carry the thousands and thousands of tons which we now haul by a train—supposing even that such a locomotive could be built—we distribute our load over a number of freight cars, which the locomotive is able to draw with ease, without undue strain on itself or the freight cars. Thus we are able to handle a much heavier load, at an actual saving in hauling expense per unit, than we could if we depended upon separate horses or individual locomotives to do the transporting. In a similar manner we use the trailer in connection with an automotive vehicle.

DOUBLES LOAD CAPACITY

It has been mathematically proved—and experience has verified the statement—that an average truck, on a fairly hard-surfaced road, without excessive grades, can not only carry a

load equal to its own rated load capacity, but can in addition easily haul a two-wheel or four wheel trailer bearing an equal load. Similarly, in the case of the semi-trailer, the towing vehicle (bearing no load of its own) can haul a load at least twice as great as its own load capacity. The foregoing figures are very conservative, and trailer manufacturers are careful not to make any claims which might appear extravagant, but under conditions which are at all favorable to trailer operation, appreciably heavier loads can be handled without difficulty and without danger of damage to the truck thru overstrain. Daily experience proves the truth of this statement.

The source of this additional hauling power of the towing vehicle will reveal itself upon a moment's consideration of the principle upon which an automotive engine is constructed. That is, in designing a motor for a truck or automobile, a certain reserve power must be allowed for, to enable the vehicle to climb unusual grades or perhaps go thru roads which are exceptionally soft. But under average conditions this reserve is seldom, sometimes never used, and even under unusual circumstances is, as a rule, only partially needed; hence it becomes available for hauling a trailer.

of a draw-bar. The heavier styles are usually built on the design of a motor truck, but as no engine is needed, the trailer may be of lighter construction. This is of course an advantage, as less power is thus required to haul the vehicle itself and more becomes available for moving the actual load it carries.

TRUCK MAKERS IN FAVOR OF TRAILERS

It will be of great interest to trailer operators to know that the Automobile Chamber of Commerce (representing practically all the important motor truck manufacturers in this country) at a recent meeting in Detroit adopted the Society of Automotive Engineers' Government type trailer hook, to be used as standard equipment by all members of the Chamber. This will obviate the necessity of installing special attachment on the truck before it can be used with a trailer. The mere fact that the Chamber has adopted this as standard equipment, is in itself proof that truck manufacturers approve of the use of trailers with motor trucks.

The semi-trailer is distinguished from the four-wheeler in having only two wheels and one axle. In operating a semi-trailer with a truck, the body of the latter is removed and



The Upper Picture Shows an Eight Ton Stake and Rack Body Attached to a 3½ Ton Truck. The Second Trailer on the Right Is Being Loaded and Will Be Ready for the Truck Upon Its Return. The Middle Picture Shows a Train of Motor Truck and Trailers Operated by the Salt Lake (Utah) Pressed Brick Co. This Concern Operates Nine, Five Ton Trailers.



The Combination Shown in the Lower Picture Is the Regular Load Hauled by the Salt Lake Pressed Brick Co. The Load of 5,000 Brick Is Divided as Follows: 2,600 Brick on the Truck and 2,400 on the Trailer.



With the facts before him, it is a simple matter for the automotive expert to determine whether a trailer can advantageously be used under given conditions with a specified towing vehicle, and trailer manufacturers are always glad to give accurate information on this point to prospective buyers.

TYPES OF TRAILERS

There are several distinct types of trailers, and numerous minor modifications of these to suit specific purposes, but the two kinds of most practical use to the brick and clay industry are the four-wheel and the semi-trailer.

The four-wheel trailer, as its name implies, has four wheels and two axles, and is hitched to its towing vehicle by means

the free end of the trailer attached to the rear of the truck platform, by means of a device very much like the "fifth wheel" of a horse wagon. Road tractors, especially designed to be operated with semi-trailers are also manufactured. In any event, a motor vehicle with a short wheel base is usually preferred. A load transported on a semi-trailer has its weight distributed between the semi-trailer and the towing vehicle, each bearing a proportionate share.

SEMI-TRAILER EASILY HANDLED

The advantage of using a towing vehicle which carries no load of its own is, obviously, that no time is lost in loading and unloading; it is a matter of only a few minutes' time to

couple or uncouple the semi-trailer. On the other hand, such a tractor is not easily available for use as a truck, for operation by itself.

Incidentally, trailers and semi-trailers may be operated in connection also with passenger automobiles, and in fact light trailers are very often used in this way, but even considerable loads may be hauled by four-wheel trailers connected up with the larger touring cars.

Despite the considerably augmented load capacity of trailer and semi-trailer units, experience has shown that the increased expense of operating the towing vehicle is only about fifteen

percent of equipment and gives a return on the investment only when it is actually on the road, whereas while it is being loaded its operation represents a distinct loss, which materially adds to the ton-mile cost of transportation.

Henry Maurer & Son of New York City put the matter aptly when they say:

"Trailers provide an obvious advantage for numerous reasons, chiefly that a heavier load can be hauled with a smaller motor and that one motor truck can be used with two or more trailers, so that a load can be en route to a job while an empty trailer is being loaded; thus the motor truck loses no time waiting to load."

VERY LITTLE BREAKAGE

The plan of operating three trailers with each truck is often followed to great advantage. Thus one trailer will be unloading at the job, a second will be loading at the yard, while the third will be on the road with the truck, ready without delay to pick up a loaded or unloaded trailer as the case may be, when it reaches its destination. This is known as the shuttle system.

The question may come up in connection with the transportation of brick by trailer: "What is the danger of chipping?" The experience of manufacturers who are hauling brick on trailers day after day indicates pretty strongly that there is little complaint to be made on the score of damage to the load. Of course in selecting trailer equipment, it is wise to make sure that adequate devices have been provided for taking up the jar and shock of stopping and starting and the bumping due to inequalities of the road, but in the reliable makes this feature has been carefully looked after. It need hardly be added that the trailer should be operated with a dependable make of truck, and of a style that is adapted not only to the type of trailer to be used, but to road conditions as well.

TEST SHOWS TRAILER EFFICIENCY

A test made for the Hydraulic Press Brick Co. of Chicago, with a truck and semi-trailer demonstrated that even very deli-



The Two Trailers Illustrated in This View Drawn by a One Ton Motor Truck, Hauled 8,250 Pounds of Paving Brick at Each Load, 46 Times in One Day on a Round Trip Distance of Two Miles.

to twenty-five per cent., most of this being accounted for by the additional gasoline required. On the other hand, tire and other upkeep expenses for trailers and semi-trailers are remarkably low, when compared with those of motor trucks of equal load capacity.

HOW TRANSPORTATION EXPENSES ARE CUT

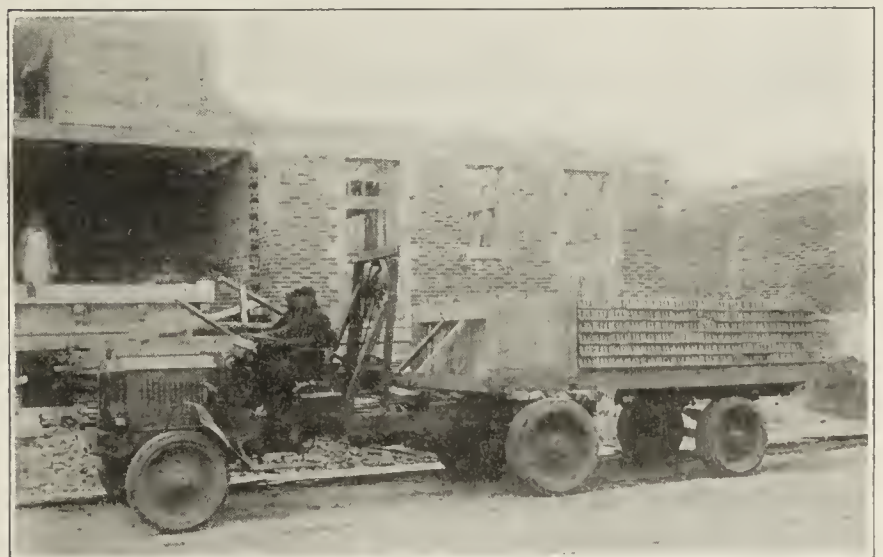
Thus it will be seen that by the use of trailers, the transportation costs of handling brick or other clay products can be materially reduced. For example, if you require an equipment that will handle a maximum of six tons of brick on one trip, you can get this result by operating a six-ton motor truck, or, on the other hand, by the use of a three-ton (loaded) truck with a three-ton four-wheel trailer, or an appropriate semi-trailer combination. Your trailer units would give you the same load capacity as you would get from the six-ton truck alone, but at considerably less expense, for the cost per ton-mile of operating a three-ton truck, even with a trailer, is considerably less than that of running a six-ton truck alone.

Moreover, trailers enable you to accommodate your transportation equipment to varying requirements. Thus, when your load is light, you can operate your three-ton truck without the trailer, which is a much more economical arrangement than carrying a partial load on a six-ton truck.

TRAILER AS A TIME SAVER

Suppose, on the other hand, your choice is two three-ton trucks. In that case your operating expense will certainly be larger than it would be with one six-ton truck; in addition you will need two drivers. Again, one of these trucks will necessarily lie idle part of the time, but since the cost of a trailer is about a quarter to a third that of a truck of equal load capacity, the loss on the investment is obviously much greater when a truck stands idle than when a trailer is not in use.

But one of the most important advantages of the trailer is that by its use the waiting time of the truck can be cut down. It must be remembered that a motor truck is an expensive



A Ten Ton Trailer Used in Connection with a Five Ton Motor Truck. Five of These Units Are Operated by the Delta Brick and Tile Co. of Delta, Mich.

cate brick can be handled on a trailer without marring. A load of 1,250 enameled brick, with a glazed surface, was transported a distance of twelve miles in forty-five minutes. Altho this variety of brick, as brick men know, is very susceptible to damage in transit, they showed no chipping. On the other hand, a similar load of brick transported over the same route by team, suffered chipping to the extent of twenty-two per cent. This is very probably due to the fact that brick wagons are commonly not hung on springs. This trailer test was particularly striking because, on account of traffic conditions, fre-

quent stops were necessary, thus demonstrating the efficiency of the anti-shock devices on semi-trailer and truck.

A PRACTICAL EXAMPLE

Among the large brick concerns which are using trailers to solve their transportation problems is the Salt Lake Pressed Brick Co. of Salt Lake City, Utah. That trailers are giving this firm satisfactory service is apparent from the comments made on the subject recently, to the writer. They say:

"We are using a fleet of seven Packard six-ton trucks and White truck, both of which are giving us excellent service. Repairs and operation troubles have thus far been very few. The trucks are on the job every minute needed. Our trailer equipment consists of nine double-entry five-ton Troy trailers. We deliver anywhere within a radius of thirty-six miles, but our average haul is six to seven miles. Our regular load is 5,000 brick, divided as follows: 2,600 on the truck and 2,400 on the trailer. We figure on each truck making from two to four trips a day, according to the distance traveled. We try to have our units loaded promptly at the yard, and we are so equipped that with some kinds of brick we can remove the empty truck and trailer bodies and replace them with loaded bodies. In this way we cut down the loading time considerably. The truck and trailer bodies are all removable and interchangeable with one another."

Without doubt the possibilities of a trailer deserve careful consideration by manufacturers and others engaged in the brick and clay industry.



Conditions Better in Common Brick Industry

The ninth "Monthly Digest of Conditions in the Common Brick Industry," as prepared by the Common Brick Manufacturers Association of America, has just been published and among other things says:

"The major items in home construction today, if the homes are built of brick, are within 50 per cent. of 1914 costs. The masonry item, the carpentry and several of the sub-trades have been well liquidated. Plumbing still costs in the neighborhood of 150 per cent. more than it did in 1915. Heating apparatus is similarly high. Painting and decorating have not been thoroly deflated, and financing remains almost at the peak. It costs from 200 to 300 per cent. more to finance a home building operation today than it did in 1914.

"If these three or four elements could be brought down as carpentry and masonry costs have been brought down, it would not cost a great deal more to build a home in any part of the United States than it would have cost had there been no war or other great disturbance. In the previous issue of this Digest, we pointed out how the scale was steadily going upward even before the war. The home builder and home buyer demanded better equipment, better finish; and while no one could say exactly what the normal advance in building costs might have been between 1914 and 1921, it is quite possible that it would have amounted to 25 per cent. Thus, with the major items in house construction only 50 per cent. above 1914 level, the statement is justified that building costs are not excessive.

"A great deal of publicity has recently been given to investigation of the building industry in the larger centers. Much space has been filled with exaggerated statements on the part of the investigators and with loose testimonies before the investigators, all of which has tended to give the reader the impression that a gang of merciless brick men, lumbermen and contractors were seeking to fleece every man who would build. This does not represent the true condition, but has unquestionably resulted in discouraging building. By what standard can any man say that a home is

not worth exactly what it costs today? If we compare the service rendered by the well built home with the service rendered by most of our purchases of necessities in life, the home investment will make a good showing.

"Comfortable, permanent, good looking homes of five and six rooms are being built in various parts of the country today at from \$6,000 to \$7,500. Add to this the price of the lot and the average man may own a brick home with an expenditure of from \$7,000 to \$8,500. The payment may be distributed over ten or twelve years and the house, with the minimum upkeep, will serve him his life time, and be good for two succeeding generations. Is not a structure which will render safe and comfortable occupancy for a period of one hundred years worth \$8,500 to any man with a family? The same man paying \$50 a month rent will spend \$6,000 in ten years and have nothing to show for it.

"All of this is preliminary to and has a bearing upon the summary below reflecting conditions in the common brick industry in America.

"The most important fact brought out by the reports of the brick manufacturers who are members of the C. B. M. A. of A., covering the thirty-day period preceding June 1, is the lowering of the composite price per thousand of common brick by practically one dollar. The composite price reported on May 1 was \$16.11, while the composite today is \$15.14. This is a recession of nearly 40 per cent. from the peak. The lowest plant price quoted in the current reports is \$10 per thousand in the Southeastern states. The highest price is \$20 a thousand for the exceptionally high-grade hard brick made in some New England cities.

"The number of burned brick on hand has been reduced during the month, the most marked reduction appearing in District No. 5, which includes Illinois, Indiana, and Wisconsin.

"There were fewer plants closed by sixteen than in the May 1 report. Of the 33 plants closed all but three give as their reason 'No Demand.' These figures are evidence that building is not resuming to the extent which the demand for homes would justify.

"Since our last report several cities have taken an important step in encouraging home building by decreasing the wall requirements for brick residences from twelve to eight inches. A number of cities also have adopted the Ideal brick hollow wall, now recognized as the most economical form of construction. To encourage building activities, important cities that have recently amended or interpreted their code to permit Ideal construction are Washington, D. C., Cleveland, Toledo, Cincinnati, Erie, Pa., Minneapolis, and Newark, N. J. The 8-inch wall has recently been adopted for residences in Buffalo, Milwaukee, Paducah, Ky., and Worcester, Mass."



Discover Ancient Brick Kiln in Ruins

A discovery reported to be of unusual importance near the ruins of the Tumacacori mission was made recently by Frank Pinkley, custodian of the Casa Grande ruins and supervisor of the restoration work in national monuments for Arizona. The excavations made about the mission near Nogales, included a brick kiln which Pinkley declares probably was used in manufacturing the brick used in the construction of the Tumacacori mission. Samples of seven varying sizes and shapes of brick were found in the kiln unearthed and were similar to those of which the mission was built.

Mr. Pinkley considers the discovery of importance on account of it furnishing to him absolutely correct samples of the brick used so that he may make reconstruction of the mission an accurate duplicate of its original style.

PLAN *to* LEARN FUNDAMENTALS *of* CLAY

R ESEARCH WORK of a character and scope to embrace every stage of clay product manufacture has at last taken on a definite shape and the program for the beginning of such work has been mapped out. At the meeting of the Executive Committee in Chicago, June 16, plans for going ahead with the work were formed and real work will soon begin.

One of the objects of the research work is to establish correct and economical methods of procedure in the drying, burning and other stages of manufacture of which now comparatively little is known. A. V. Bleininger has emphasized the fact that permission would be sought to place men on various typical plants, given a free hand to conduct certain experiments upon representative kilns in process of burning, to follow up the effects of such experiments, and otherwise to study thoroly the results of experimental operation. It is expected that on account of the importance of the work a great number of plants will be offered for use for this kind of work. The men on the Executive Committee have already offered the facilities of the plants with which they are connected.

The research work is to be connected along general lines benefitting alike the members of all associations participating.

PROGRAM TO BE FOLLOWED

Following is the plan of research which has been mapped out by the Technical Committee, of which Mr. Bleininger is chairman, and approved by the Executive Committee in behalf of the four clay products associations:

"The work will be divided into two parts, (1), dealing with the study and investigation of commercial kilns, represented by the up-draft and the down-draft kilns, the continuous kiln of the straight tunnel type, the compartment continuous kiln and the tunnel car kiln. (2) Dealing with the study of the water-smoking and dehydration process, by the Bureau of Standards, the study of heat absorption thruout all the burning stages by the Ceramic Department of the University of Illinois, the study of oxidization and vitrification stages by the Bureau of Mines, and experiments in the study of combustion and transmission of heat, in a semi-commercial kiln, by the Bureau of Mines at Columbus.

"The first part will constitute by far the most extensive part of the program and will involve the detailed study of the different types of kilns, not only from the standpoint of fuel consumption but particularly with reference to the rise of temperature thruout the kiln and the actual rates of water-smoking, oxidization and vitirification.

BUREAU OF MINES TO SEND OUT EXPERTS

"It is proposed to study also the draft conditions, the combustion as taking place in different types of furnaces, the various heat losses, and the influence of the kiln, flue and stack dimensions upon the burning process.

"It is proposed that the Bureau of Mines send out well-trained experts to conduct this work at representative plants, selected for the purpose with special reference to securing a certain degree of freedom of action. By this is meant permission to be granted to make such burning changes as are apparent from the results obtained and to make notes of the effect of such changes. A complete study will be reported of each kiln examined, drawing from the observations made, all conclusions warranted by the facts.

"In addition, a questionnaire will be sent out by the committee to the industries concerned by means of which

it is expected to obtain a certain amount of information which will help in drawing general conclusions.

"All of this information will be collected and treated from the standpoint not hitherto presented to the industries. It is expected to present the information collected by means of definite statements or definite recommendations in language that can be understood by all.

LABORATORY STUDIES TO BE CONDUCTED

"The laboratory studies to be conducted at the Bureau of Standards and the University of Illinois are intended to furnish information concerning the methods of attack and the fundamental principles involved in the burning process and thus will supplement the kiln studies.

"In these investigations all purely theoretical features have been eliminated and only such work will be done as will throw direct light upon the phenomena involved in the burning process.

"Of particular interest will be the tests conducted on the semi-commercial kiln to be erected by the Bureau of Mines at Columbus. In this kiln all the factors entering into combustion will be under control, such as the volume of air used for combustion, the intensity of the draft, the maximum and exit temperatures, and the rate at which the heat is transmitted to the ware. Thus it is expected to determine the effect of heavy or light fuel beds, the effect of long flame versus short flame coal, and other factors.

GOVERNMENT BUREAUS CONTRIBUTE TO WORK

"It is to be noted, therefore, that the investigations will proceed along broad and comprehensive lines, and it is to be expected that the results will prove of interest and value to all of the ceramic industries.

"It is perhaps not too much to say that some of the results that may be expected will be of a more fundamental character than it is possible to realize at the present time. It has always been the experience of such comprehensive investigations that many by-products, in the shape of important results that cannot be foreseen in the beginning, are obtained.

"The funds appropriated by the Heavy Clay Products Associations will be largely augmented by funds granted the Bureau of Mines by Congress and also by a contribution on the part of the Bureau of Standards. It is safe to say that the additional funds which will be made available are equal to at least twice and perhaps three times the amount contributed by the Associations."

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Kentuckians to Meet in a Local Confab

Secretary J. Crow Taylor, of the Kentucky Clay Products Association, has sent a call to all clay manufacturers in Kentucky to meet at the Palmer House, Paducah, Ky., Wednesday, July 13, at 11 a. m.

The object of the meeting is to talk things over so that all manufacturers may understand better just what conditions are in the trade and thus be better prepared to meet them. A similar meeting held in Henderson recently proved very successful and worthwhile.

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New Oklahoma Plant Now Operating

The new brick plant at Chelsea, Okla., which had been under construction for the past several months, is now manufacturing brick.

HISTORICAL INCIDENTS *in* PAVING BRICK INDUSTRY

Veteran Manufacturer in Interview Relates Some Interesting Facts Relative to the Origin and Development of Brick Pavements in This Country

Editor's Note—This magazine has published from time to time articles in the nature of historic development of the clay industry, making certain historic claims concerning the year in which this or that clay development took place, and as to when and where the characteristic use of brick was made for a particular purpose.

This can be as good a time as any to establish authentically important events, both regarding the initiatory development of the great variety of clay products, where and under what circumstances and at what time their respective use has been introduced. Facts concerning the foregoing, authenticated by competent record and proof, are invited from every source from all our readers.

WHEN SILAS FREEMAN, back in 1830, dug into a hillside overlooking the Ohio River in Hancock County, W. Va., and discovered a vein of fire clay, there and then was the beginning of an industry which had more to do with putting the Northeastern part of the Panhandle state "on the map" than anything else. Silas Freeman with two men and a boy in those early days made by hand 3,500 brick a day, and fired about two kilns a year. From that humble beginning the Globe Brick Co., of which Capt. John Porter, now aged eighty-three years is at the head is producing one hundred thousand brick per day.

It was a small beginning away back in 1830, but that beginning ultimately resulted in the use of vitrified brick for street paving, and the first paved street was put down in Wheeling, W. Va., when A. J. Sweeney was then the mayor of the city.

OLDEST BRICK MANUFACTURER

Capt. John Porter is the oldest living brick manufacturer in the United States. In those early days, they did not manufacture brick as fast nor by the same method as they do these modern times, and the marketing proposition was rather tough sledding. The "Doubting Thomas" was always on the job. This and that member of council shook his head and declared: "Huh, put brick in the streets for horses and wagons to race over? Never!"

"I always have to smile when I think of the fun I had at Johnstown, Pa., years ago when Johnstown was just itching to pave a few streets, but a little competition was in the field," said Captain Porter, relating the incident. "I was tipped off that a big order was in sight, for I had many friends who knew what was about to be done. I slipped into Johnstown late in the afternoon of the day when the council was to meet, but did not register at the hotel. Well, a friend or two of mine and I quietly entered the council chamber, took a back seat and patiently awaited events.

AN INTERESTING STORY

"By and by a silvered-tongue attorney began to address the members of the Johnstown Council. There was no brick

in the world like the one he was trying to sell. He was getting along in pretty good shape and after talking almost an hour declared that I was dead and would never be heard from, therefore he was ready to take the brick order.

"Well, my friend sitting by my side gave me a poke in the side and I poked him back with my elbow. We both smiled. No one in the room knew me by sight. In a moment or so after the wonderful talk of the attorney-salesman had ended, I was asked to come to the front of the council chamber, which I may add was crowded.

"You can imagine the surprise of the previous speaker and even the crowd as their eyes followed me as I walked before the councilmen. I could not help but smile at my opponent. I talked briefly, but to the point. Then, I got the order for the first brick ever laid in a street in Johnstown."

And Captain Porter smiled and laughed over again as he related the story, which happened close to thirty-odd years or more ago.

WOOD USED TO BURN FIRST PAVERS

But, getting back to the making of fire brick in Hancock County, when coal and wood were used for kiln burning. This was in the early days. A very poor grade of coal was taken from the hill near where the clay was being dug, and this was at a point now almost directly across the Ohio River



Captain John Porter, a Veteran Paving Brick Manufacturer Who Tells Interesting Story of Paving Brick Development.

from Toronto, Ohio. Silas Freeman and others who followed him in making brick bought their wood by the cord from farmers at a price from \$1 to \$1.50 per cord delivered.

Hugh Newell, whose son, John Newell, still resides in Hancock County a little south of Chester, floated keel boats loaded with wood from near Chester, down the Ohio to the early

brick plants then established in the vicinity of the present site of New Cumberland. Then a horse or two would be used in towing the boats back up the Ohio river for another load.

And it will surprise not a few to learn that vitrified brick from the plants of John Porter were shipped to the iron mills in the Pittsburgh district in the same kind of keel boats. Two and three horses, single file, would tow the boats up stream, making the trip to Pittsburgh, a distance of fifty-odd miles in two or three days. On the return trip, the boat with "crew and power" aboard would float down stream, except when a wind was against the craft, then the towing operations would be resumed. Towing, however, was only done in the summer season. The stage of water was low and the "sailing was easy."

CAPTAIN PORTER MADE FIRST OHIO PAVERS

"We used to put about as many brick in one of those old boats," declared Mr. Porter, "as we now pile in a fifty-ton freight car."

Credit for the introduction of paving brick in Ohio belongs to Captain John Porter, who began making paving brick in a commercial way in 1882. It was well vitrified and exceptionally durable. At first, city councils were not inclined to accept brick as a paving material, arguing that brick would not stand the wear and tear of traffic.

In order to convince those in doubt of their error of judgment, Mr. Porter often made a present of a nominal number of brick to cities and municipalities, so that a portion of a street could be paved, this for testing purposes.

A striking example of this liberality on the part of Mr. Porter, was in Cleveland, Ohio, where they had much difficulty in keeping a footing for the horses that pulled the street cars. In 1888, Mr. Porter, in order to "get into Cleveland," gave the late Tom L. Johnson, the then head of the traction interests of Cleveland, sufficient paving brick to pave between the rails for a few squares on Ontario Street. The brick were delivered, Mr. Johnson had them laid between the rails on Ontario street as far as they would reach, and then the next year Mr. Porter received an order for one million paving brick for Cleveland delivery. There are today, almost 1,000 miles of brick-paved streets in Cleveland, and Cuyahoga County, all being the growth of the gift of a few brick from Mr. Porter to Mr. Johnson.

BRICK GIVE EXCELLENT ACCOUNT OF THEMSELVES

The first paving brick shipped into Ohio from Hancock County, W. Va., or any other state, was that shipment from the Porter plant to Steubenville, when a portion of Third Street was paved near the present City Building. So satisfactory were results, that as late as in 1910, Steubenville City authorities wrote Mr. Porter that "the street was in excellent condition, considering the fact that the brick were furnished and laid in the year 1884 and had not cost one dollar for repairs in twenty-six years, except when taken up to lay water or other pipes and street car lines."

In 1884 and 1885 Mr. Porter furnished brick for pavements in Zanesville, Ohio, and during the next few years for such work in Cleveland, Columbus, Springfield, Cincinnati, Bellaire, East Liverpool, Newark and Dayton.

Mr. Porter was not only the originator of this class of brick, but was the pioneer, and did more than any other man to initiate the movement to have brick accepted as a common paving material.

CAPTAIN PORTER STARTED HUGE INDUSTRY

Many men thru their accomplishments and inventions will be always remembered as great public benefactors, but it may be truthfully said that few of the inventions of the past half century have proven of more actual worth to the farmer,

the merchant and townsman alike than the introduction as a method of road improvement of the vitrified brick and paving block. And, as a result of the foresight of Mr. Porter, there has sprung up thruout the United States a great industry employing thousands of men and engaging millions in capital in the manufacture of these materials.

Each year sees an ever increasing number of miles of public thoroughfares in the United States improved with what has come to be recognized as the best road paving material yet discovered.

Hancock County, W. Va., was the "mother of brick paved roads," and is still a very great factor in the manufacture of such materials. While it is true she has many "offsprings," the county still stands preeminently the leader in the manufacture of materials for road improvement. It has within its borders no less than ten large plants manufacturing nothing but paving brick and paving block.

And Captain Porter, is now known as "the father of brick paved roads" thruout the nation. What is more, he is still active in the manufacture of brick and block.

There is not a manufacturer of paving brick and block in the country who has received so many written tributes of the worth of his endeavors as has Mr. Porter.

Today sees Mr. Porter still active in business, going along the path of life with his sons, hand in hand, one for all and all for one, a living example that compels one to pause for the moment and study a picture that is really worth while.



Dwight T. Farnham Joins Engineers' Staff

C. E. Knoepfel & Co., Inc., industrial engineers of New York City, announce the association of Dwight T. Farnham as firm member and vice-president. Mr. Farnham is best known to the readers of *Brick and Clay Record* as the writer of a series of articles which were published in this magazine a few years ago. These articles have since been published in book form under the title of "Scientific Industrial Efficiency," which has had a wide distribution in the clay industry and is considered one of the best in the clayworker's library.

Mr. Farnham's career has eminently fitted him for the responsible position which he has now assumed. He has come thru the ranks as a laborer, foreman, superintendent, general manager, in several large corporations in the East, Middle West and Pacific Coast. He is a graduate of Hanover and Yale. He is vice-president of the Society of Industrial Engineers, a member of the American Ceramic Society and a number of well known national organizations.

Having been in Europe twice, Mr. Farnham has had ample opportunity to study foreign methods and practices. He has acquired a reputation as a lecturer and writer of note, his articles having appeared in leading magazines. Associated with C. E. Knoepfel & Co., Inc., he will remain in a position to continue his services to the clay industry—a service that has been very valuable.



Production and Imports of Chromite in 1920

According to a report from the U. S. Geological Survey there has been a decrease in the production of chromite in the United States in 1920 and importations have increased to a larger extent than ever before. 2,502 long tons of domestic chromite valued at \$44,857 were sold in 1920 which is approximately half the amount mined the year previous. The imports of the mineral as reported by the Bureau of Foreign and Domestic Commerce, were 150,275 long tons, valued at \$1,921,-824. This is thirty per cent. more than imported in the year having the next highest total.

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

POTTERY INDUSTRY IN 1920



PRELIMINARY statement made public by the United States Geological Survey, Department of the Interior, shows that the pottery industry of the country in 1920 was in a prosperous condition. The value of the product, according to Jefferson Middleton, was the greatest yet recorded. No statistics of the quantity of ware produced are collected, but it is believed that not only was the value of the products the greatest in 1920, but that the bulk also was probably the largest ever made.

The demand for pottery during the early part of the year was unprecedented. The dearth caused by the reduction of imports during the war and the inability of the domestic producers to supply the demand created unusual conditions which prevailed thruout the year, some plants having enough orders on hand at the beginning of 1920 to keep them busy nearly the whole year. The continuation of the demand is the more remarkable in view of the large increase of imports of pottery during the year, which augurs well for the continued and increasing popularity of American-made pottery.

Notwithstanding the great demand and the large value of the output the potters had many handicaps, chief among which were the shortage of fuel, especially in the western district, and the shortage of materials on account of transportation difficulties, both of which caused considerable loss in production, and it was well toward the middle of the year before anything like normal conditions prevailed in regard to fuel and transportation. The refusal of operatives to work full time and the decrease in output per man were further handicaps which it was impossible to overcome.

There were no general strikes in the industry, but the few minor ones that occurred were sufficient to cause serious loss in production.

INCREASED PRODUCTION

The value of the pottery produced in the United States in 1920 is estimated at about \$105,700,000, an increase of 39 per cent. over the value in 1919. The increase in 1920 over 1918 was 65 per cent. As compared with the value in 1910 the value of the pottery marketed in the United States in 1920 increased 213 per cent., and as compared with that in 1900 it increased 434 per cent. Every kind of pottery classified by the Geological Survey increased in value except red and brown white-lined cooking ware and chemical porcelain, neither of which

is produced in large quantities, for in 1920 they together amounted to less than 1 per cent. of the total value. Whiteware, valued at \$39,360,000, showed the largest increase, \$9,660,000; sanitary ware, valued at \$21,480,000, increased \$7,000,000; porcelain electrical supplies, valued at \$18,560,000, increased \$6,370,000; china, valued at \$11,060,000, increased \$3,435,000. Stoneware, the fifth product in importance, was valued at \$6,025,000, and increased \$1,240,000. If chemical stoneware is added the value of stoneware was over \$7,000,000, and the increase was \$1,595,000.

Whiteware and china, which comprise the general household wares and which constituted 48 per cent. of all pottery products, were valued at \$50,420,000, an increase of \$13,095,000. If to this sum is added the value of sanitary ware and porcelain electrical supplies, their value would be \$90,460,000, or 86 per cent. of the total value, an increase of \$26,465,000 over the value in 1919.

IMPORTS AND EXPORTS

The imports of pottery for consumption in the United States in 1920 were valued at \$10,850,772, an increase of 50 per cent. as compared with those in 1919. Some of this increase was due, no doubt, to the increase in the selling price of the ware, but the bulk of imports also increased very considerably in 1920.

Ninety-six per cent. of the value of imports was that of the general ware, of which 93 per cent. was decorated. Every

	1919 (estimated)	1920 (estimated)	Approximate increase or decrease in 1920 Amount	Pct.
Red earthenware.....	\$ 1,160,000	\$ 1,385,000	+\$ 225,000	+19
Red and brown white-lined cooking ware.....	750,000	700,000	— 50,000	— 7
Stoneware	4,785,000	6,025,000	+ 1,240,000	+26
Chemical stoneware	645,000	1,000,000	+ 355,000	+55
Chemical porcelain.....	180,000	90,000	— 90,000	—50
Whiteware	29,700,000	39,360,000	+ 9,660,000	+33
China	7,625,000	11,060,000	+ 3,435,000	+45
Sanitary ware	14,480,000	21,480,000	+ 7,000,000	+48
Porcelain electrical supplies	12,190,000	18,560,000	+ 6,370,000	+52
Miscellaneous	*4,625,000	+6,040,000	+ 1,415,000	+31
Total	\$76,140,000	\$105,700,000	+\$29,560,000	+39

*Including art pottery, crackle porcelain, doll heads, gas-burner tips, gas-mantle rings, hardware trimmings, heating porcelain, nursery ware, pins, stilts, and spurs for potters' use, porcelain thread guides, saggers, smoking pipes, soda fountain supplies, and turpentine cups.

+Including art pottery, crackle porcelain, doll heads, earthenware, fittings for textile mills, gas and electric lighting and heating appliances, hardware trimmings, heating porcelain, lead pots, pins, stilts, and spurs for potters' use, porcelain caster cups and door knobs; potters' supplies, smoking pipes, and turpentine cups.

variety of pottery classified by the Bureau of Foreign and Domestic Commerce increased in value but two—tobacco smoking pipes and earthenware and crockery not decorated. Decorated china showed the largest increase in value—\$2,129,689—and decorated earthenware the next largest—\$1,329,745. Notwithstanding the great home demand for pottery, the exports of earthen and stone ware, china, and sanitary ware (valued at \$2,837,469) increased \$601,823 in 1920 compared with 1919 and reached their highest value.

Tariff on Raw Clay and Glass

The administration's tariff bill which was introduced in Congress recently, and which promises to raise \$700,000,000 revenue each year, covers besides other material, ceramic products.

Schedule 2 applies to earths, earthenware, and glassware. One of the controversies before the ways and means committee in connection with this schedule was between producers of china clay or kaolin, in Georgia, Pennsylvania, and other states, who demanded protection, and importers of English kaolin, who insisted that the imported product is superior to the domestic clay. The duty was increased from \$1.25 per ton to \$2.50, the Payne rate.

Increased duties are provided on various kinds of glass, including optical glass, manufacture of which was begun during the war, and which is given a duty of 35 per cent. ad valorem.



Japanese Pottery Exports to U. S.

The activity of Japan in the exporting of earthenware and porcelain products to the United States is well demonstrated by figures just compiled covering exports of such materials for the first quarter of the present year. The compilations, as follows, are from a report of United States Consul H. F. Hawley, stationed at Nagoya, Japan:

Articles	Quarterly Dozen	Value
Decorated porcelain tableware.....	621,269	\$448,654
Other decorated porcelain.....	10,605	6,370
Decorated earthen tableware.....	3,509	6,371
Other decorated earthenware.....	7,475	5,665
Porcelain tableware (not decorated).....	55,931	13,133
Other porcelain (not decorated).....	1,789	2,540
Earthenware (not decorated).....	4,067	1,038
Total	734,645	\$483,771
Porcelain and bisque dolls.....	108,920	\$ 25,233
Other porcelain toys.....	25,733	19,356



Burgess Nominated On Tariff Commission

William Burgess, Trenton, N. J., an officer in the United States Potters' Association, and well known thruout the pottery industry, has been nominated by President Harding for the remaining vacancy on the Tariff Commission. Mr. Burgess has devoted many years to the study of tariff problems in the interests of American potters, and has traveled extensively in foreign countries for this purpose. At one time he was a partner with John A. Campbell in the International Pottery, Trenton.



To Study Kentucky Clays

Willard R. Jillson, state geologist of Kentucky, is compiling data on the state's mineral resources for commercial purposes and has arranged for a survey of Kentucky clays to be made by Professor H. Ries, head of the Department of Geology, Cornell University. Professor Ries, together with an assistant, will inspect all the plants and deposits and analyze samples for a report on the commercial possibilities of the clays.



Lay Cornerstone of Pottery Plant

Work on the Homer Knowles Pottery plant at Santa Clara, Cal., is being rushed with all possible speed and it is thought that the new enterprise will begin operating by the first of September. About 250 people are to be employed at the plant including between one hundred and

two hundred workmen who are coming from Ohio. The cornerstone of the new plant was laid with a parade and elaborate ceremonies which attracted widespread attention in that part of the state on June 9. The company is capitalized at \$750,000, par value \$10 per share. Plaster for making the moulds has been ordered and workmen were to be in Santa Clara early in July to start this operation.



Presented With Royal Porcelain Vase

The delegation of thirty members of the Rotary Club of Worcester, Mass., in convention at the recent international meeting in Scotland, has been presented with a royal Worcester porcelain vase, on occasion of a visit to the porcelain works at Worcester, England. It will be presented to the Worcester (Mass.) Art Museum as a permanent exhibit on the return of the delegates in September.



Pottery to Install Continuous Kiln

A new scheme is to be tried out at the new plant of the Onondaga Pottery Co., at Syracuse, N. Y. The company is planning to install a continuous type of tunnel kiln in place of the usual periodic kilns. The performance of this type of kiln has been carefully watched in other installations, and it is expected that with some modifications of the original idea the continuous kiln will be a success.



Flint and Spar Company Expands

The Maryland Flint & Feldspar Co., Bel Air, Md., has plans under way for the erection of a new plant to replace its present works, with cost estimated at about \$250,000, including machinery. It is said that the expansion is the result of the present scarcity of uniform feldspar for pottery requirements, and the new plant will have considerably increased capacity over the former works.



Pottery Company Enjoys Good Business

Several thousand dollars will be expended by the Chelsea China Co. of New Cumberland, W. Va., for repairs to the kilns during the next several weeks. The firm will shut off the fires in its continuous kilns the middle of the month. The New Cumberland pottery has been enjoying a steady run of business during the past few months in spite of the prevailing industrial depression.



Pottery Company Gets Government Business

The Iroquis China Co., of Syracuse, N. Y., is planning on having its full force of three hundred employes at work July 12, after the customary two weeks shut down having received large orders for china for hospitals under the Federal Public Health Service. Other business has also been secured which promises to keep the plant quite busy.



Adds Two Kilns To Increase Output

The Whitman (Mass.) Electric Mfg. Co. has completed the installation of two kilns at its plant, to be used for the manufacture of electrical porcelain products. The company is developing a line of porcelain specialties, including receptacles, rosettes and kindred products.

Large Porcelain Concerns Merge

The Jeffrey DeWitt Co. of Detroit, Mich., recently merged with the Champion Spark Plug Co. of Toledo, Ohio. The Detroit plant, it is understood, will be operated as the Champion Porcelain Co. under the same management as before.

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Porcelain Company Organizes

The United States Porcelain Co., Trenton, N. J., has been incorporated under state laws with a capital of \$100,000, to manufacture porcelain products. The company is headed by Thomas Midlowski, John Janus and Carl Markau, 54 Seward Avenue.

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Feldspar Company Organized

The Feldspar & Mica Corporation, Wilmington, Del., has been incorporated with a capital of \$100,000 to produce feldspar and kindred materials. The local incorporators are William G. Singer, L. A. Irwin and M. L. Rogers.

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Chicagoans Form China Company

The Stetson China Co., 1535-1537 South State Street, Chicago, Ill., has been incorporated with a capital of \$100,000 to manufacture and deal in chinaware, earthenware, etc. The incorporators are Lewis B. and Joseph Stetson.

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Chemical Company Opens Office in Pittsburgh

The Roessler & Hasslacher Chemical Co., New York, has opened a new district sales office at Pittsburgh, Pa. W. H. Smith, heretofore in charge of the Cleveland office of the company, will be manager of the new branch.

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Trenton to Have a New Porcelain Plant

The capitalization to the amount of \$100,000 for a company to be known as the United States Porcelain Co., Trenton, N. J., was announced recently. The concern proposes to manufacture various kinds of clay products.

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Massillon China Co. Soon to Operate

Contrary to rumors current, the new plant of the Massillon (Ohio) China Co. will operate. It was reported that this plant, which has been completed, and ready for the installation of machinery, will begin operations just as soon as sufficient stock is sold to finance the commencement of activities.

The plant of the Massillon China Co. is located about one and a half miles north of the city. It is complete in its construction and is now awaiting the installation of the machinery.

The factory is of six kiln capacity and others will be added as business warrants. Semi-porcelain ware will be the product, officials announce.

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Convert Electric Light Building Into Pottery

Another clay making industry has been added to the already large list in New Cumberland, Ohio, with the announcement this week that J. B. Van Dyne and Frank Radcliffe, have purchased the old electric light building and will convert it into a

factory manufacturing ash trays, vases and other pottery products.

The promoters have placed a small kiln in operation and plan the erection of another kiln within the next few months, or as soon as increased business warrants the addition.

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American Pottery Exports

When American importers of foreign made china and earthenware are active, they not only are interested in canvassing the domestic trade, but they also do an export business. For ten months, ending April last, there was \$199,754 worth of imported ceramic ware exported.

Against this record for ten months, is the record for the ten months ending April, 1920, when \$168,459 was shipped.

Exporting of imported ceramics in April, 1920, amounted to \$59,891, and the same month this year the exporting of this class of merchandise declined to a total of \$10,474.

The most recent records of the Department of Commerce show no china clay or kaolin in bonded warehouses, although during April 410 tons were withdrawn at a valuation of \$4,207.

Alaska is a rather active buyer of earthenware, stone and chinaware. In April, 1920, ware was shipped to Alaska to the value of \$17,723, and in April, 1921, this business declined to \$6,415.

During the ten-month period ending April, 1921, shipments of ceramic ware to Alaska amounted to \$67,204 and for the same period ending April, 1920, the shipments amounted to \$84,380. For the same term ending April, 1919, sales to Alaska amounted to \$62,851.

Hawaii is a larger buyer of ceramic wares from the United States than Alaska, for in April, 1920, its purchases of this class of merchandise were valued at \$25,336, and for April, 1921, soared to \$44,027.

For ten months ending, April last, the United States shipped Hawaii ceramic ware to the value of \$601,557, and for the same term, ending April, 1920, the record showed sales valued at \$205,276; for the ten-month term in 1919 the business amounted to \$111,780. This comparative record shows that Hawaii is one of the best customers of the United States when it comes to buying ceramics.

Porto Rico is another good buyer of American ceramic merchandise, and in April, 1920, its purchases were valued at \$24,145, but for April, 1921, the demand declined to a valuation of \$15,089.

For ten months ending April, 1921, Porto Rico bought ceramic ware from the United States to the value of \$530,968, and for ten months ending April, 1920, the purchases had a valuation of \$278,955. A still lower record was marked up for Porto Rico for the ten months ending April, 1919, when ware valued at \$200,037 was bought.

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Chemical Exposition to Be Held in New York

Announcement has recently been made that the seventh National Exposition of Chemical Industries will be held in the 8th Coast Artillery Armory, Jerome Ave., and Kingsbridge Road, New York City, during the week beginning September 12. There will be ample room for more than four hundred exhibits in this structure which is entirely free from obstructing posts and pillars.

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Increases Rates on Brick

The Public Service Commission, Harrisburg, Pa., has granted permission to the Pennsylvania-Ohio Electric Co. to increase its commodity and switching rates on brick from Carbon, Pa., to various stations on the line.

CURRENT PRICES *of* COMMON BUILDING BRICK DRAIN TILE *and* HOLLOW BUILDING TILE

READJUSTMENT of tile and brick prices is still much in evidence. This is shown by the fact that in the cities listed below there are twenty-four changes in prices in common brick, eighteen in hollow tile, and fourteen in drain tile. While in most cases the prices were downward, there are several instances where a readjustment upward was made. For instance, Scranton, Pa., brick prices jumped from \$18.75 to \$22.00, and at Seattle, Wash., the price rose from \$16.00 to \$19.00.

In the case of hollow tile an increase of \$5.00 was registered

at Topeka, Kans., and \$2.50 at Dallas, Texas. In the case of all these products where fluctuations have occurred, they are relatively slight.

There is still a great range of prices for the same commodity in different sections of the country. Common brick is quoted from a low of \$12.00, which is the Chicago price, to a high of \$32.00, which is the current price in Portland, Me. In hollow tile prices there is even a greater range, varying from \$41.00 per thousand at Columbus to \$200.00 per thousand at Albany, N. Y.

	Common Brick Per M	Drain Tile (4") Per Ft.	Hollow Tile (5x8x12) Per M
Portland, Me.	32.00	.12	
Boston, Mass.	20.00	.153	68.50
Providence, R. I.	28.00	.16	
Hartford, Conn.	24.00*	.08	
New Haven, Conn.	25.00	.10	
New York City.....	18.40	.13	
Albany, N. Y.	24.00	.09	200.00
Utica, N. Y.	22.00	.065	
Syracuse, N. Y.	20.00	.07	135.00
Oswego, N. Y.	30.00	.06	
Binghamton, N. Y.	22.00	.06	
Elmira, N. Y.	30.00	.09	
Rochester, N. Y.	18.00	.06	100.00
Buffalo, N. Y.	25.00	.055	118.00
Jamestown, N. Y.	35.00	.085	120.00
Allentown, Pa.	19.50		111.20
Erie, Pa.	26.00	.0525	100.00
Philadelphia, Pa.	20.00	.15	
Pittsburgh, Pa.	20.00	.08	
Reading, Pa.	20.50	.07	
Scranton, Pa.	22.00	.08	
Newark, N. J.	21.00	.09	120.00
Paterson, N. J.	20.00		
Trenton, N. J.	22.00	.10	
Wilmington, Del.	26.00	.10	125.00
Washington, D. C.	22.00	.08	130.00
Baltimore, Md.	25.00	.07	125.00
Norfolk, Va.	18.50	.08	160.00
Richmond, Va.	25.00	.08	
Huntington, W. Va.	18.75	.075	85.00
Fairmont, W. Va.	30.00	.06	110.00
Wheeling, W. Va.	24.00	.06	100.00
Atlanta, Ga.	12.50	.09	87.60
Miami, Fla.	28.00	.12	180.00
Tampa, Fla.	20.00		137.50
St. Petersburg, Fla.	18.00		120.00
Louisville, Ky.	19.00	.045	110.30
Lexington, Ky.	18.00	.10	100.00@
Memphis, Tenn.	14.50	.07	120.00
Nashville, Tenn.	18.00	.08	111.20@
Birmingham, Ala.	23.00	.07	116.00
New Orleans, La.	15.00	.075	
El Paso, Tex.	16.00		90.00
Houston, Tex.	19.00	.13	103.10@

	Common Brick Per M	Drain Tile (4") Per Ft.	Hollow Tile (5x8x12) Per M
Dallas, Tex.	20.00	.15	112.50
Topeka, Kans.	35.00	.065	115.00
Little Rock, Ark.	12.50*	.10	
Oklahoma City, Okla.	18.00	.10	93.00
Cincinnati, Ohio	18.00*	.0708	72.75
Cleveland, Ohio	15.00	.047	62.00
Columbus, Ohio	18.00	.055	
Toledo, Ohio	19.00	.06	90.00
Detroit, Mich.	18.00	.07	93.40
Evansville, Ind.	14.00	.03	70.00
Fort Wayne, Ind.	18.00	.05	95.00
Indianapolis, Ind.	17.00	.06	85.00
South Bend, Ind.	20.00	.04	115.00
Terre Haute, Ind.	18.00		
Bloomington, Ill.	22.00	.05	100.00
Chicago, Ill.	12.00	.06	93.75
Moline, Ill.	19.00	.085	92.00
Peoria, Ill.	16.00	.0697	63.75
Green Bay, Wis.	14.00	.04	110.00
Milwaukee, Wis.	16.50	.07	120.00
Grand Rapids, Mich.	18.00		
Minneapolis, Minn.	18.00	.07	100.00
St. Paul, Minn.	18.00	.07	100.00
Davenport, Iowa	20.00	.07	123.00
Des Moines, Iowa	22.00	.08	85.00
Sioux City, Iowa	19.50		100.00
Kansas City, Mo.	22.00	.0625	100.00
St. Louis, Mo.	17.00	.08	85.00
Lincoln, Neb.	17.25	.08	73.50
Denver, Colo.	14.00	.08	100.00
Butte, Mont.	21.00		15.00\$
Los Angeles, Calif.	15.00	.05	100.00\$
San Diego, Calif.	20.00‡	.105	120.00\$
San Francisco, Calif.	18.50	.05	112.00
Portland, Ore.	19.00	.085	100.00
Seattle, Wash.	19.00	.072	110.00
Cheyenne, Wyo.	18.00		
Winnipeg, Man.	19.00	.13	181.00
Toronto, Ont.	18.00	.08	
Halifax, N. S.	22.00		
Quebec, P. Q.	18.00	.065	

Editor's Note.—The prices of the commodities listed above are reported as delivered on the job, and are, therefore higher than the plant prices. These prices are obtained from a sister publication, **Building Supply News**, and are sent to this paper by dealers in the various cities listed. **Brick and Clay Record** will appreciate any corrections. The prices marked in heavy type do note changes from last list.

*Hartford, sold by mfrs. only; Little Rock, Cincinnati, f. o. b. cars.

‡Carlot rate, San Diego.

¢Erie, drain tile, per C.

£Boston, hollow bldg. tile, per ton.

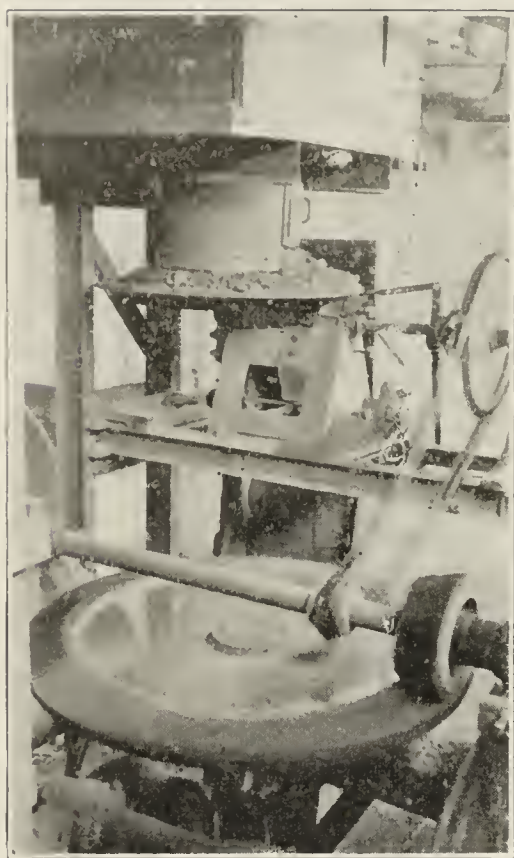
££Houston and Dallas, same price applies to Interlocking tile.

\$Los Angeles, Heath tile; San Diego, sizes 4x12x12 and 6x12x12. Butte, per ton at yard.

@Hollow tile, Lexington, Nashville and Houston f. o. b. cars.

The SUPERINTENDENT

Helpful Hints for Practical Men
Whose Problem is Maximum
Production With Minimum Cost



Disc Feeder Above Dry Pan and Method of Driving Feeder from Dry Pan Shaft.

Clay Grinding

The clay industry has been somewhat slow in adopting mechanical means for feeding crushing machinery. So far but a very small part of the industry has installed equipment that would supplant the use of a man continually shoveling clay into dry pans or pulverizers.

Not all plants, however, have failed to give this matter proper attention. In the recently described Franklin Brick & Tile Co.'s plant, plate feeders are used to feed clay into the crusher and dry pans. Considerable labor was eliminated thru the installation of this equipment.

The accompanying photographs show part of the equipment of the well designed grinding department of the Alliance Clay Products Co.'s plant, of which Otis Wilcox is manager. This concern manufactures paving brick and part of their success in making a high class and uniform product is due to the excellent preparation of the raw clay.

The raw material is first fed into a single roll crusher where it receives its preliminary grinding and then is elevated into the bins above the dry pans. At the bottom of these bins are disc feeders which feed the partially crushed shale in a constant and uniform quantity to the dry pan.

Much of the dust in grinding is eliminated in this manner and the operation is very simple, requiring only one man in attendance in the whole grinding department which includes the crusher and two dry pans. The per man output in the grinding department is high at this plant, the repairs and maintenance of machinery low and the working conditions very good.



Chute Feeding Shale from Disc Feeder (in Upper Right Hand Corner) to Dry Pan.

Vibration Is Injurious to Pyrometer

The pyrometer is quite in contrast to the crude and rough material produced by a clay plant. While clay products and clay machinery can usually be handled roughly and with little care, it is essential that pyrometers be handled with great cautiousness. It is a scientific instrument of extreme sensitiveness.

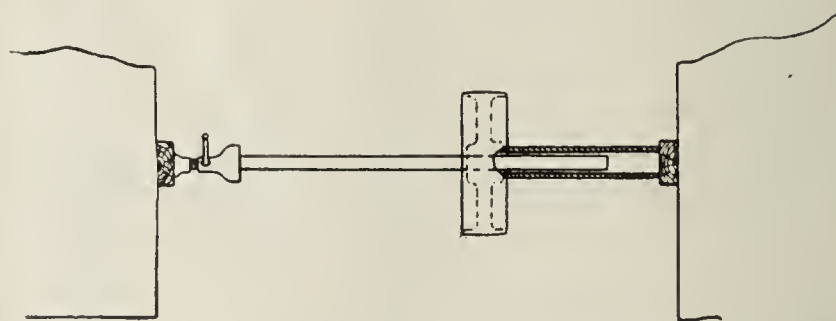
In mounting the indicator it is essential that it be placed at a point where vibration is at a minimum and where dust is kept away from the instrument. The cold junction should be properly cared for and a good lead wire to use from the couple to the cold junction is a copper-constantan wire. This wire, however, should not be used for a couple at high temperatures.

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Removing Pulleys from Shafting

Solid cast-iron pulleys are easily broken with sledge hammers when struck on the hub or arms in attempting to remove

them from a section of shaft. The illustration shows a method of forcing the shaft thru the pulley while the pulley is held stationary by a short piece of pipe slipped over the shaft. A



Method of Using Screw Jack to Force Pulley Off of Shaft Safely.

screw jack against the other end of the shaft furnishes the power to push the shaft thru the pulley, both jack and iron pipe resting against solid walls.

How Lime and Iron Content Affects Fusion

The presence of lime and ferrous oxide is, as we know, of decided significance in the rapidity of the fusion. Any lime content above, say seven per cent. will hasten vitrification so that such a clay may be useless for purposes like the manufacture of paving brick. In all clay wares, the interval between the point of complete vitrification and the point of fusion should be as long as possible, since evidently, this means safe burning. In the case of the presence of considerable ferrous oxide we have obviously only one remedy—complete oxidation before attempting to raise the heat.

IN *the* WAKE of *the* NEWS

Being Brief Mention of a Host
of Interesting Happenings in the
Varied Fields of Clayworking

Western Brick Man Dies of Injuries

An auto accident in Waynesburg, Pa., caused the death of E. J. Lesser, president of the Boulder (Col.) Pressed Brick Co. Mr. Lesser was 67 years old.

Kentucky Brick Man at Springs

Harry Cramer, of the Lexington (Ky.) Brick Co. has been spending some weeks at Dry Ridge Springs, Ky., where he is endeavoring to dispose of an attack of rheumatism, which has been troubling him all spring.

Rock Breaks Leg of Employee

Harry Hedler recently had the misfortune of having one of his legs broken near the ankle while at work on the Albion (Ill.) Brick Co.'s plant. It is understood that the cause was due to a rock falling against him, striking the leg near the ankle.

Tile Manufacturer Dead

Charles J. Kelly, partner in the firm of De Paoli & Kelly, 338 West Thirty-eighth Street, New York, manufacturers of tile, died at his home on June 24. Mr. Kelly was prominent in the building industry in the city, and chairman of the Board of Governors of the Building Trade Employers' Association.

Retired Brick Manufacturer Dies

Patrick McCabe, for a number of years previous to his retirement from active business, eight years ago, manager of the Donnelly Brick Co.'s yard at New Britain, Conn., died at his home in that city recently. He had been ill but a few days. Mr. McCabe had been an active figure in New Britain business and political life for many years. He had served on many boards and commissions under the city government and had represented the city in many capacities.

Death of Austin Hewitt

Austin Hewitt, who died recently in Chattanooga, Tenn., belonged to a Connecticut family long and prominently identified with the brick manufacturing business both in New England and the South. He was a son of Elkanah Hewitt, who owned a large brickyard near his home in Preston, Conn. The son learned the trade in his father's yard and was for a time identified with the Hewitt business. Later he went to Macon, Ga., and to North Carolina and Arkansas, following the same line.

Paving Brick Plants Busy in Birmingham

The demand for paving brick in Birmingham, Ala., continues to improve. Manufacturers report that they are working on orders secured some time since, and that they are adding new orders to the old ones.

BRISTOL'S RECORDING PYROMETER



tells the workman at a glance just what the temperature conditions are now, what they have been, and in what direction they are leading. With this knowledge he can readily obtain close regulation—and even inexperienced workmen can do better work.

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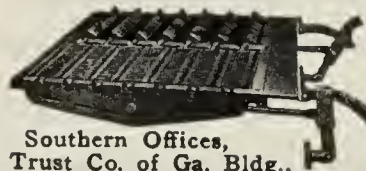
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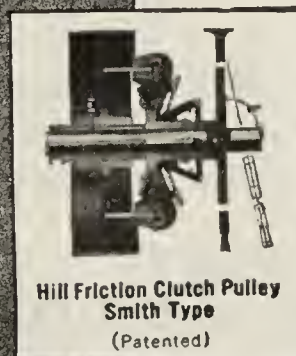
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Brick and Clay Record

The Southern Clay Manufacturing Co., which makes a specialty of the manufacture of paving brick, is running on full time. The company recently secured a number of large orders from distant cities and is now working on these orders.

September to See Opening of Building

At present the supply of building brick is greater than the demand, altho a good many small orders are being received almost daily. The Birmingham Brick Co., of Ensley, Ala., one of the largest plants in the Birmingham district for the manufacture of building brick, is closed down on account of the slow demand for building brick.

While there is considerable building being done in Birmingham and in the Birmingham district, the buildings are all small ones and but small quantities of brick are being used on these buildings.

Brick and cement men and builders generally are predicting that business will be down to a normal condition, or practically so, by September 1, and after that date they predict that building will pick up all over the south, and that there will then be a good demand for brick of all kinds.

At present the demand for tile and clay pipes of all kinds is rather slack. However, a few good orders for roof tiling have been reported, but no big orders are being received.

To Pave Five Miles of Roads

Five miles of paved road, at an estimated cost of about \$300,000, and connecting Ensley, Ala., with North and East Birmingham, will probably be built by Birmingham in the near future.

Jefferson County was to have assisted in this paving work, but owing to the present financial conditions of the county no assistance can be looked for from that source, it is stated. It is probable that a part of the expense of this paving will have to be paid out of the city treasury, as all of the amount cannot be taxed up to the abutting property, it is stated.

This road is to be paved with brick or cement and a bitholitic covering. It will connect some of the biggest manufacturing plants of the city, and is badly needed, the city commissioners say.

The fact that the electric street car system is in the hands of a receiver has retarded some street paving plans of the city. However, this difficulty has been removed, as the street car company has made arrangements to pay their part of the paving in equal annual installments, running for a period of ten years.

Begins Work With New Machinery

Modern machinery has been installed and operations have commenced with a capacity of fifty thousand brick a day at the plant of the Douglas Brick & Tile Co. at Elfrida on the Courtland branch of the El Paso and Southwestern Railroad near Douglas, Arizona. Plenty of clay is available but the demand for brick in that territory is negligible at present. The company, however, expects to do well when normal conditions prevail again with better values for copper.

Foreign Orders Amount to Large Sum

What may augur extremely bright future prospects is the report that the three porcelain plants operated in Richmond, Cal., on San Francisco Bay, by the Pacific Porcelain Ware Co., have orders booked ahead that will necessitate enlargements and keep them running full blast for at least two years. It is reported also that orders from the Orient and Europe total \$8,000,000.

Los Angeles Concern to Have Permanent Exhibit

The various uses of face brick and tile products manufactured by the Los Angeles (Cal.) Pressed Brick Co. from Southern California deposits will be shown in a permanent exhibit to be opened shortly in the Metropolitan Building, Broadway and Fifth St., Los Angeles. The exhibit will be open to the public with the object of encouraging building of a substantial character. The exhibit will be made as attractive as possible and will also be a guide to builders, architects and home builders.

To Furnish Large Quantity of Drain Tile

Thirty-two carloads of drain tile for the Yosemite National Park comprise the first order of the California Pottery Co. plant at Merced, Cal., when operations commence soon. Other orders will keep the first unit of the plant busy for eight months, says E. A. Forder, general manager of the concern.

"The question of drainage is a big problem in the San Joaquin valley and the manufacture of drain tile by this company will go a long way toward the solution of that problem," declared E. C. Hamilton, expert drainage engineer of San Jose, recently.

California Building Situation

Very few building operations are going on in San Francisco, Oakland and the vicinity in California, with a consequent decline in brick and building material sales. This situation has been the same for several weeks, and, altho the building material men are selling some brick and terra cotta, the amount is limited, due to the labor controversy. Almost everyone connected with the industry, including the representatives of the labor unions, is hopeful of a settlement within a week or ten days, and if these predictions become true there will be a very large increase in sales of building materials, as all construction has been tied up for some time.

Considerable terra cotta is, however, being sold to points outside of San Francisco, and several plants are reported busy. The N. Clark & Sons factory at Alameda, Cal., is reported extremely busy on orders for country points, where the building controversy is not a factor.

To Cooperate on "Better Home" Movement

Convinced that the work being done by the national organization of face brick manufacturers thru the use of informative literature, newspaper advertising and permanent brick exhibits for the education of the public will encourage construction of more durable structures and have a beneficial influence on the character of both residences and commercial buildings, Los Angeles architects and builders plan to cooperate thru their local organizations.

Construction of better homes thru use of face brick will be the slogan thruout California in the "better home movement." Cooperation along these lines of leading architects and builders has already resulted in a heavier demand this year for the finer grades of brick than has been felt by the industry for many years.

In Los Angeles and in other cities of the state this demand is reflected in building operations where permits show a constantly increasing number of brick dwellings and business structures. The export demand for Los Angeles made brick is growing rapidly, according to figures of the Los Angeles (Cal.) Pressed Brick Co., which show that a

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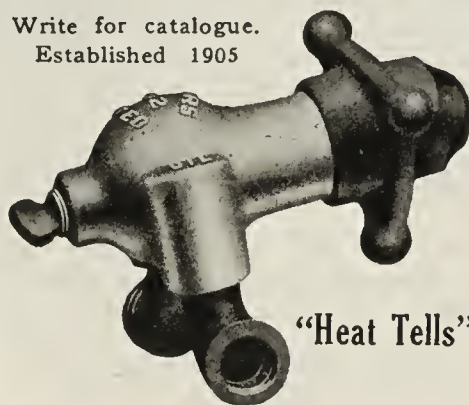
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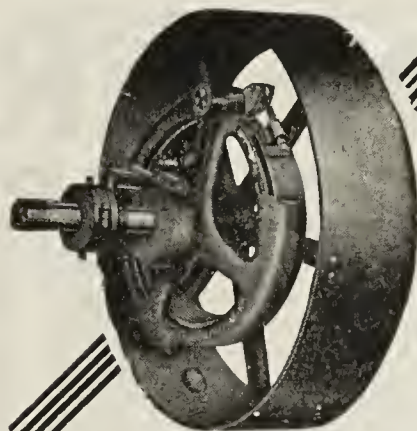
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Boss Ten-Hour Dryer

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Brick and hollow ware dried in TEN HOURS with either WASTE HEAT or EXHAUST STEAM. One-third less cost to build—two-thirds less cost to operate.

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50% less coal consumed and 50% less time required in burning each kiln. Less kilns required to meet a certain given capacity than when burning the old way.

Dryers and kilns designed and built—write us regarding your drying and burning difficulties.

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PULSOMETER STEAM PUMP



Will keep your pit free from water. Pumps continuously without attention or adjusting. Handles any fluid up to 40% solid when agitated and is particularly suited to Clay Plant needs.

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Distributors in all principal cities

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Once on, Crescents are on to stay. A Crescent joint will outlast the most durable belt. No part of belting is punched out or weakened. Maximum strength maintained. Belt runs same as endless on pulley side. No knocking or thumping. Noiseless. Joint hugs pulley. Full power transmission insured.

Write for new Booklet W on Increasing Belting Efficiency.

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considerable amount of brick is used to supplement that which comes from all sections of Southern California and Arizona.

Georgia a Big Producer of Clay Products

The ninth annual report of the Department of Commerce and Labor shows Georgia as an important manufacturer of clay products. Brick, tile, sewer pipe, cement and clay products have increased in importance every year. The record in this line of industries for the year ending December 31, 1920, is as follows:

Number operating, 109; capital, \$8,975,626.73; amount paid for machinery and repairs, \$458,125.90; chief raw materials, clay stone, sand, shale, cement, value of raw material, \$3,960,263.63; amount paid to officers, \$422,704.55; average number of employees, 4,475; value of all manufactured products, \$1,520,596.13.

Increases Capital Stock

Wm. Dee Manufacturing Co. of Chicago, has increased its capital stock from \$100,000 to \$600,000, according to recent reports.

Chicago Building Permits Make Big Jump

Building permits issued by the City of Chicago increased 25 per cent. in the month of June as compared to May, when the building tie-up was in full effect. Permits for homes jumped from 259 to 416. Apartment building permits number 114, compared to 95 in May. The value of buildings for which permits were taken out increased from \$2,967,705 to \$7,429,700.

"Now is the time to build," said Deputy Commissioner Robert Knight. "Remember you can mortgage your home to buy an automobile, but you cannot mortgage a car to buy a home."

Making Extensive Improvements

John E. and Walter S. Middleton, who purchased the Heckard Brick Co. in Canton, Ill., last fall, and who operate under the name of the Middleton Brick Co., have taken into partnership with them, R. L. Kelly. Mr. Kelly is an architect, who graduated from the University of Illinois in 1913. During the past several months the Middleton Brick Co. has been making extensive improvements, having installed a fireproof dryer, a large engine, electric motors, a late model brick machine and Underwood gas producers for the drying and burning of brick.

The Middleton Brick Co. is increasing the output of its plant and it is the intention to have one of the largest brick plants in Illinois. Mr. Kelly's architectural knowledge will be at the disposal of prospective builders.

Idaho Plant Keeps Busy

Brick are being manufactured at the rate of 100,000 a week at Glens' Ferry brick plant, which is located near Nampa, Idaho.

Brick Company in Difficulty

W. K. Hamilton has been appointed receiver for the Terre Haute (Ind.) Vitrified Brick Co. by Judge John E. Cox in Superior Court at Terre Haute. The action, it is reported, was taken on petition of the United States Trust Co., which alleges that the brick company has defaulted on a bond issue of \$200,000 held by the trust company.

Industrial Exposition in Fall

The Made-in-Indianapolis industrial exposition the week of October 10 is now assured, following the pledging of nearly one hundred manufacturers, among whom the trade was prominently represented, to display their products at a meeting recently at the Chamber of Commerce. O. B. Iles, chairman of the manufacturers' committee of the chamber, who presided at the meeting, announced that Claude S. Wallin would be manager of the show. William Ganson Rose, who directed the Cleveland Industrial Exposition of 1909, addressed the meeting and told how the plan was executed in that city. John B. Reynolds, general secretary of the Chamber of Commerce, made a short address, telling how the Chamber of Commerce was cooperating with the many industries in Indianapolis.

Relief From Employment Act

A case of more than usual importance to the trade has been decided in Indianapolis relative to payment for any employee who leaves the employment of any manufacturing concern. Judge Chamberlin, in circuit court, has just held as unconstitutional the act of March 3, 1915, which provides a penalty for any employer who fails to pay any employee within seventy-two hours after the employee either leaves his employer's service voluntarily or because of discharge. Prominent men in the trade here say that in times of rapid labor turnover the act worked a considerable hardship and caused needless expense in the office overhead. Attorneys in memoranda submitted to the court pointed out that such a law takes the property of the dependant without due process of law, offers no protection to the employer, is unreasonable, oppressive and excessive in its penalty and does not cite or require the employee to bring suit at any given time.

Authorize New College Buildings

The biggest building program ever outlined at one time for the Iowa State College, Ames, was put underway recently when the State Board of Education authorized the construction of buildings and other improvements which will cost almost \$1,000,000. The major items of the building program call for a new college to cost \$475,000, a new physics building to cost \$225,000, part of a new agricultural engineering building, additional barns and other minor improvements. R. A. Pearson, president of the college, E. P. Schoentgen of the State Board of Education, and W. T. Proudfoot, Des Moines architect, are at present visiting a number of universities in the East to study plans which can be utilized in the buildings at Iowa State College.

Making Face Brick Instead of Tile

Coral Ridge (Ky.) Clay Products Co. report demand for building tile quiet, resulting in increased production of face brick, which is moving at a very fair rate, and reduced production of hollow tile.

Industrial Work Keeps Plant Busy

Barbourville (Ky.) Brick Co. has been fairly busy this season as a result of a good deal of work in the mountain district by the Louisville & Nashville R. R., and continued development work by some of the larger coal companies.

Brick Plant Now Has Railroad Switch

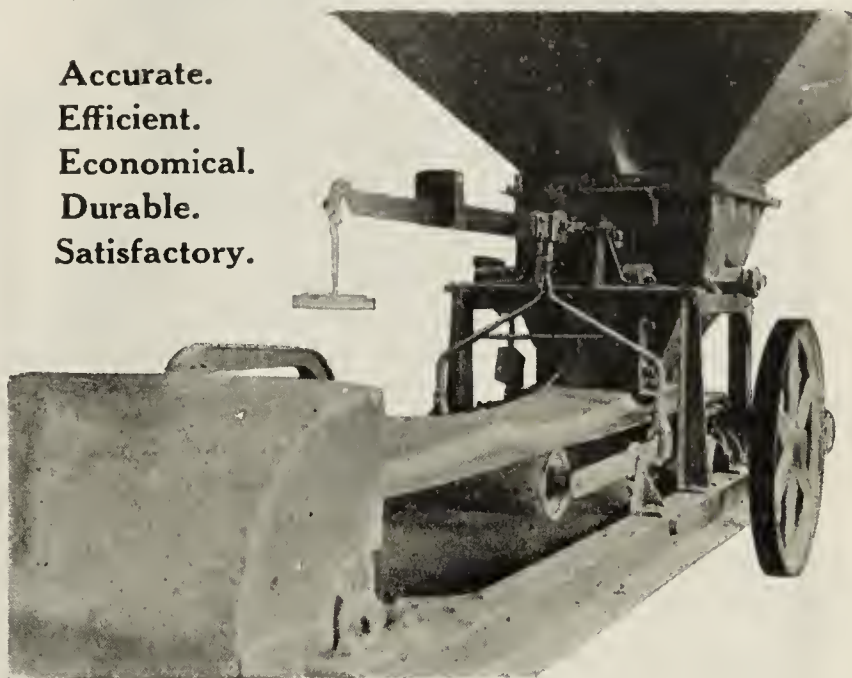
First class shipping facilities are now available to the Carrollton (Ky.) Brick Co., due to the fact that a switch was built into the plant from the C. & W. Railroad last

SCHAFFER POIDOMETER

Clay Plant Efficiency

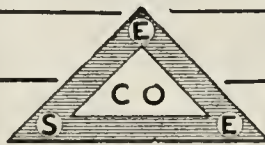
starts with the proper proportioning of the clay and water. The POIDOMETER is today the only machine on the market which will, with any degree of accuracy proportion clay and water. It weighs according to adjustment, from 1½ to 21,000 lbs. per minute.

Accurate.
Efficient.
Economical.
Durable.
Satisfactory.

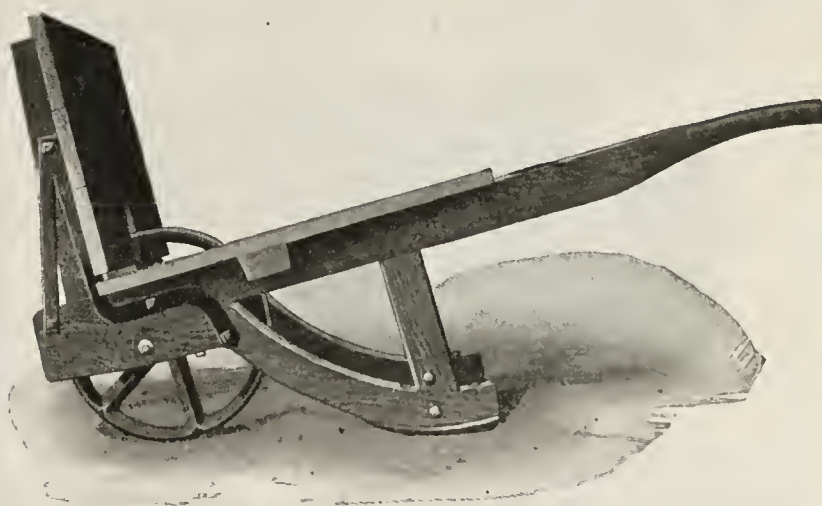


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The Invincible Barrow



This favorite barrow has lost none of its popularity. We furnish them for either brick or sewer pipe and with plain wood, babbitted or spring bearings. They are honestly constructed thruout. On account of increased manufacturing facilities we are able to make immediate delivery.

Write for prices.

TORONTO FOUNDRY & MACHINE CO.,
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RUBBER BELTING

for POWER TRANSMISSION *and* CONVEYING *of* MATERIALS

Rubber Belting is acknowledged by experienced brick and clay men to give the best service for conveying and elevating of materials and in the transmission of power.

But, the very nature of the materials handled, wet and raw clay, stiff mud, etc., requires belting with a backbone and stability.

With more than 35 years' experience in manufacturing and handling rubber goods we are able to furnish you with conveyor, elevator or transmission belting that will show you economy.

We have solved many a perplexing belting problem. Quite likely we can assist you. May we have the opportunity?

QUAKER CITY RUBBER CO.

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spring. This company is now operating and the first kiln of 200,000 brick are now being burned. 20,000 brick are made daily at this plant, which is now employing about twenty-five men.

To Exhibit Clay Products at State Fair

The Coral Ridge Clay Products Co. and the Southern Brick & Tile Co. have taken adjoining space at the Kentucky State Fair Grounds, in the new Merchants and Manufacturers' Building and plan to show their lines in September when the Fair will be on from the 11th to the 16th. The Coral Ridge company will show brick and hollow building tile, while the Southern will show drain tile and brick. Last year the Southern had an exhibit of ditching and tile laying with machinery on the ground, putting in some permanent tile for draining a section of the Fair Grounds, which were a little low.

Demand Fair But Not Brisk

A. P. McDonald, of the P. Bannon Pipe Co., Louisville, reports a fair demand for sewer pipe, but not enough to keep the plant running full, as road work is being held up in several instances. The company has a couple of good jobs to deliver hollow tile on, but this is not enough to keep the concern really busy. Mr. McDonald stated that prospects of any size were very scarce this season, there being some prospects on government hospital work at Dawson Springs, and for the new Capital Hotel project at Frankfort, Ky., Van Camp Packing Co. plant at Louisville, and a few others. The Bannon company has hollow tile contracts on two of the largest contracts of the year in Louisville, namely the new plant of the Menne Candy Co. and the Inter-Southern Building, but other than these two there is not much construction this year that takes tile.

Maine Plant Completes Burn

George Robichaud of Augusta, Me., just completed the burning of 100,000 brick for the new Masonic Home at Bath, Me. Ten arches were required for the burning. Shipment was started early this month.

Roofing Tile Concern Formed

The Boston (Mass.) Roof Tile Co. has been formed by John G. Membrino and Guy Cavailaro who have opened a place of business at 161 Massachusetts Ave., Boston.

Supplying Material for Schools

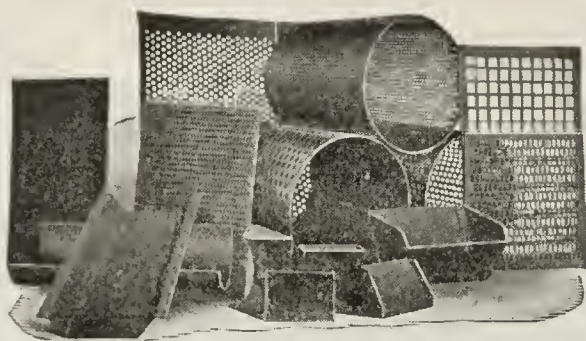
Dolben & Co., of 7 Water St., Boston, has been awarded the contract for enameled brick for two school houses to be erected by the city of New Bedford, Mass. The two buildings will cost about a million and a half dollars. Other contracts include: tile and terra cotta, to the Warner-Miller Co., New Britain, Conn.

Building Large Garage of Ideal Wall

George and Walter Howes of Florence, Mass., who operate the Howes Brick Co. of Northampton, were so much impressed with the brick hollow wall or Ideal wall demonstration at the C. B. M. A. meeting last winter that they have decided to give it a tryout on their garage. The garage is now in the process of construction and is being made large enough to house six cars.

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**ELEVATOR BUCKETS
CONVEYOR TROUGH and FLIGHTS
STACKS, TANKS,
GENERAL SHEET and
LIGHT STRUCTURAL WORK**

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State Commission Report Favorable to Brick

Brisk competition for what few orders for brick are available in Boston has resulted in a still further reduction in price. Most firms are now quoting common brick, delivered on the job at \$19 per thousand. A report of the state commission on necessities of life that building operations already are starting in many communities and that indications point to a genuine building boom by another spring, have been received by brick manufacturers and dealers with much satisfaction. An increase in demand for their product would be welcomed by all.

Stack Containing 1,055,754 Brick Razed

The tallest brick chimney in New England, 12½ feet higher than Bunker Hill monument, and containing 1,055,754 brick, has just been razed at Cambridge, Mass. The chimney was erected in 1851 by the old New England Glass Works and for many years was said to have been the tallest chimney in the country. It was 249 feet 6 inches high and was estimated to weigh 3,431 tons. It was felled by chopping away a part of the bottom much in the manner that a tree would be felled. The base was 76 feet in circumference and 24 feet in diameter with walls nine feet thick. Its diameter at the top was 15 feet with a nine-foot flue. Much interest had been expressed as to the cement used in the construction of the chimney, some authorities maintaining that cement was not in general use 70 years ago. J. B. Ducheman, an officer of the wrecking company which had charge of the demolition of the chimney, said after workmen had started to chop at the bottom that there was no doubt but that the highest quality cement was used in its construction.

Hollow Tile Demand Improving

Colburn Brick & Tile Co. of Zumbrota, Minn., recently increased the capacity of its plant at Barr Station near Zumbrota, at an expenditure of \$300,000. The total output is now 600,000 cars a year. H. W. Linder, sales manager of the Reliance Brick Co., and distributor of Colburn hollow tile, reports that hollow tile is increasing in demand continually in Minnesota and the Dakotas.

Clay Products Company Incorporated

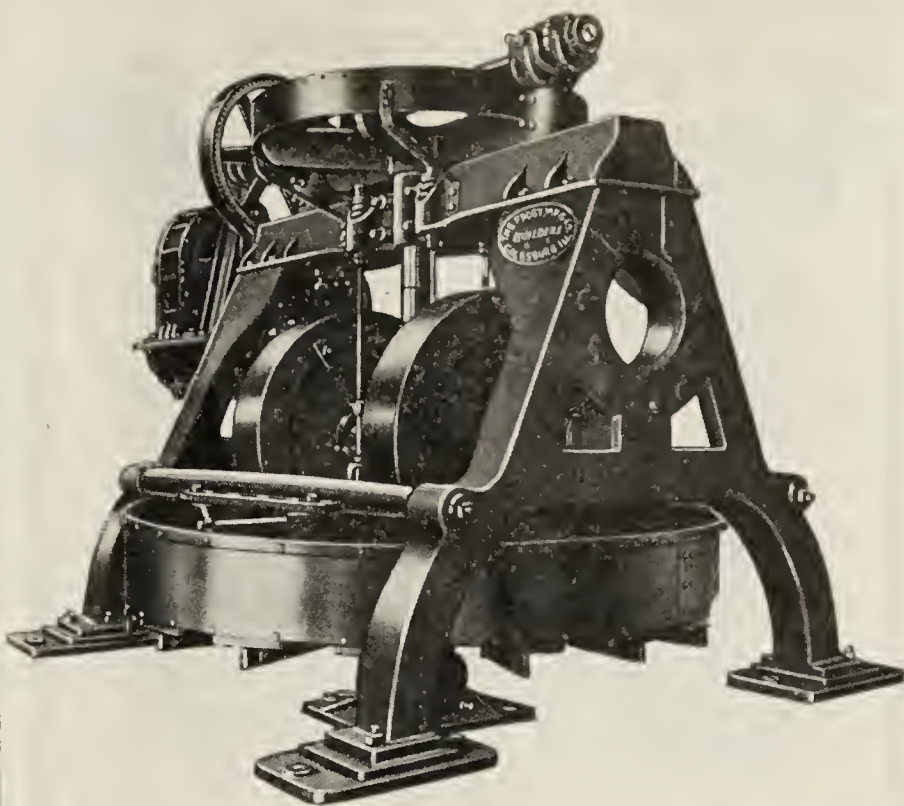
The Haydite Co., Kansas City, Mo., has been organized under Delaware laws with a capital of \$2,000,000 to manufacture clay products of various kinds. The incorporators are C. L. Squires, D. R. Lynde and B. W. Ballou, all of Kansas City.

Montana Plant Gets Lower Rate

It is reported that new tariffs effective July 7, were announced by the Interstate Commerce Commission which effects a reduced freight charge on the product of the Great Falls (Mont.) Brick & Tile Co. The rates range from 12 to 20 cents a hundred, and enables the above plant to compete thruout northern Wyoming with Denver plants. The reduction followed the application for a lower rate that the company made over a year ago.

Clay Miners Held Meeting in June

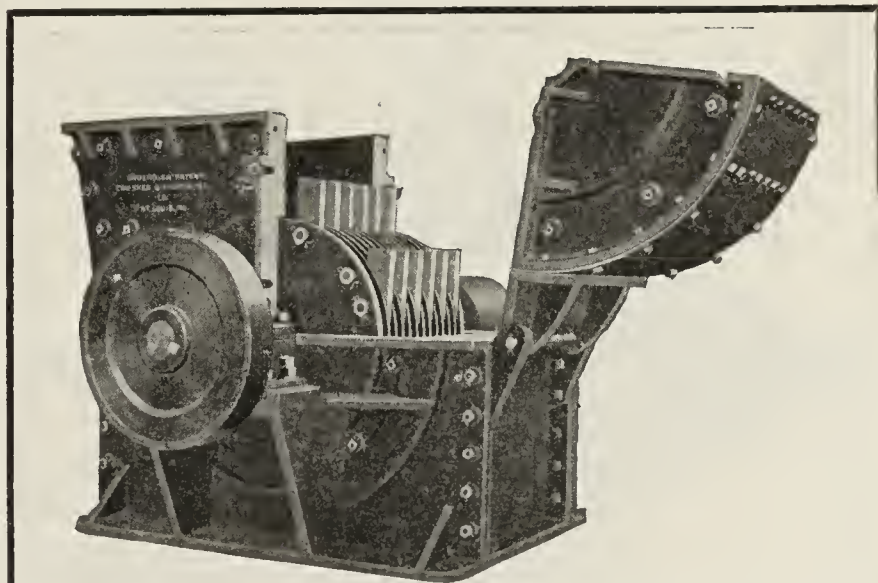
The Clay Miners and Manufacturers' Association, Perth Amboy, N. J., held a meeting at the East Jersey Club on June 22, with a brief business gathering preceded by a fine supper. A large number of members were in attendance, and a number of important matters were up for discussion.



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THE FROST MFG. CO.
GALESBURG, ILLINOIS.
ESTABLISHED 1851



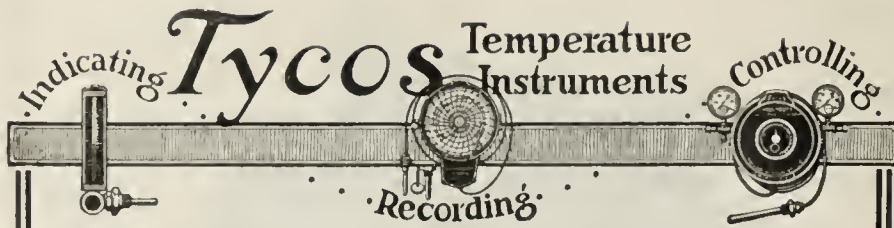
Gruendler Hercules Swing Hammer Crushers FOR EVERY CRUSHING NEED

In Dry press brick plants Gruendler Crushers are pulverizing hard shale, clay and brick bats with greater moisture content and to more uniform fineness than dry pans—it is frequently possible for one Gruendler to replace as many as 3 dry pans and insure a greater capacity with smaller horse power requirements. Products are thoroughly mixed and upkeep costs are negligible.

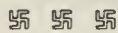
Write for Full Particulars

We welcome any questions or problems that have to do with crushing, grinding or pulverizing operations of any character and will gladly give you the benefit of years of specialized and exclusive experience in this field.

Gruendler Patent Crusher & Pulverizer Co.
924 North Main Street ST. LOUIS, MO.



Our seven decades of experience—combining highest engineering talent, modern and well organized facilities in solving of temperature problems make unusual economies immediately and permanently available in your plant.



*Our service at
your disposal.*

Taylor Instrument Companies

Rochester, N. Y., U. S. A.

There's a Tycos and Taylor Thermometer for Every Purpose
750½

The Spirit of 1921 "Lower Production Costs"

Associations in the Clay Working Industries have adopted this slogan.

Every Clay Manufacturer should have a copy of "Clay Plant Construction and Operation," in his library. It is a timely text book containing a wealth of practical information on Labor Saving equipment, efficiency methods, etc.

The price of this handsomely bound volume is \$4.00 prepaid.

You can't afford to be without a copy. Send for it today.

Brick and Clay Record

610 Federal St.

Chicago

Brick Company Buys Property; Business Good

A. S. Reid & Co., Newark, N. J., well known dealers in face brick, hollow tile and other burned clay products, have purchased property at 70-72 Clinton Street, consisting of a former residence. The company will remodel the structure to accommodate its business, and will occupy the larger portion of the structure; the site occupied is 42x60 ft. The company is now maintaining offices in the Firemen's Building. Heavy orders are reported for Fisklock tapestry brick, one of the specialties handled, and it is said this and other lines of face brick are oversold to an extent where shipments cannot be made in less than two weeks.

Eastern Concern Reduces Capital

A reduction of capital stock from \$1,000,000 to \$800,000 was made by the Long Island (N. Y.) Brick Co.

Sell Brick for Schools

The Ironclay Brick Co. of Columbus, recently sold the brick for a school building at Amsden, Seneca County, and another in Miami County, Ohio.

Get Order for 400,000 Brick

The Franklin Brick & Tile Co., Columbus, Ohio, has sold a job of 400,000 brick to the Orr Felt & Blanket Co., of Piqua, for the erection of a large factory.

Ohio Concern Increases Capital

Papers have been filed with the secretary of state increasing the authorized capital of the Alger (Ohio) Clay Manufacturing Co. from \$12,000 to \$36,000.

Begin Making Drain Tile

The manufacture of drain tile was commenced a short time ago by Miller and Bevard of Toledo, new owners of the Bloomdale (Ohio) Tile & Brick Co.

Capital Stock Increased

The Pyramid Brick Co, 1007 Schofield Building, Cleveland, Ohio, a Delaware corporation, has filed notice of increase in capital from \$300,000 to \$400,000.

Built New Trestle of Steel

To replace the wood in the trestle with steel, the plant of the Columbia Fire Brick Co. at Strasburg, Ohio, was closed down recently. The cost of the improvement was \$2,500, it is estimated.

To Reopen Ohio Plant

It is reported that the Dillonvale Brick & Tile Co.'s plant, located near Columbus, Ohio, which has been idle for over a year, is about to reopen. One hundred and fifty men will be employed.

Pays Only Thirty Cents for Labor

The wages of laborers in New Philadelphia, Ohio, were cut recently from thirty-five to thirty cents an hour by two clay plants at Sugar Creek. This is the second reduction in wages this year at these plants.

Buys 1,000 Acres Coal and Clay Land

A syndicate of Steubenville, Ohio, has purchased 1,000 acres of coal and clay lands in Pike County, Ind., near Petersburg.

A stripping mine will be opened for both products, officials announce.

Labor Asks for Eight Hour Day

Labor at some of the face brick and fireproofing plants in the Hocking Valley have demanded the eight-hour day. The usual day has been nine hours. Their demands included the same pay for eight hours as they were getting for nine hours' work. The demands so far have been bluntly refused.

Fire Brick Plants Inactive

The closing of four brick plants in the Strasburg, Ohio, district has resulted in the idleness of 300 employes at Zoar and Dover. At Zoar the plant of the Zoar Fire Clay Co. is idle. The National Fire Brick Co. plant near Strasburg which is owned by the same interests that own the Zoar plant is still in operation.

To Let Huge Paving Contracts

After waiting for almost a month in the hope of having a reduction in freight rates, Ohio Highway Commissioner Leon C. Herrick has advertised about \$5,000,000 worth of road improvement and maintenance in various counties in the state. The letting is fixed for July 22. Included in the list are about a dozen brick paving jobs.

Labor Receives Thirty-five Cents an Hour

The National and Crown plants of the Robinson Clay Products Co. are the only brick plants in Strasburg, Ohio, working at present. Eighty-five men are employed by the National and 125 by the Crown plant. At the National, laborers are receiving 35 cents an hour. The National is working six days a week. The Crown plant is working on a basis of five days a week.

Brick Prices Down Another Notch

Reductions in the price of both face and common brick in central Ohio territory still continue. Common brick are now selling from \$17 to \$19 per thousand, delivered on the job. Face brick delivered on the job sells from \$28 to \$38, depending on the texture and color. These prices are a material reduction from the levels of a month or six weeks ago.

H-W Co. Sells Part of Its Holdings

The clay and coal lands of the Harbison-Walker Refractories Co.'s plant, northwest of Strasburg, Ohio, have been sold to S. A. McCaskey, said to represent the Wayne Coal Co., for \$40,000. The machinery and equipment at the Harbison-Walker brick plant has been dismantled and shipped to another plant of the company.

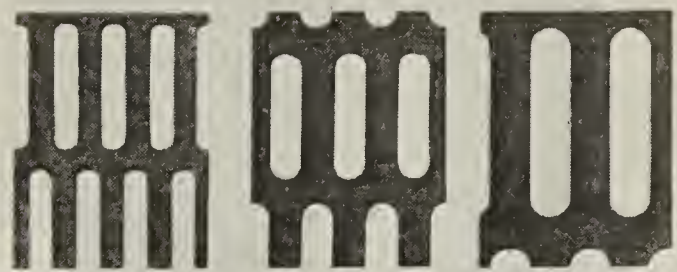
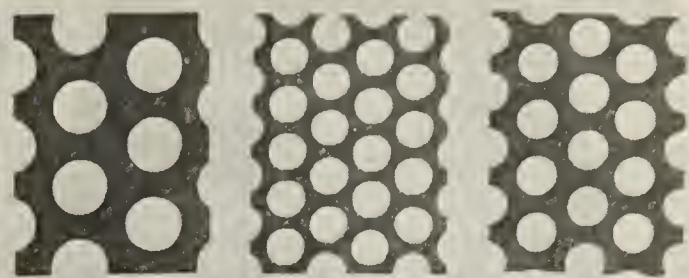
Coal Prices in Ohio Low

The coal trade in Ohio continued unchanged in most respects. Demand for steam grades is dull, and with the lake trade progressing rapidly, there is an over-supply of screenings on the market. Consequently prices are lower and quotations of less than \$1.00 are frequently heard. Lump coal from Ohio mines is selling from \$3.00 to \$3.25, and from West Virginia mines the range is from \$3.00 to \$3.60.

Complete Repairs; Start Operating

The repairs at the plant of the South Webster (Ohio) Brick Co. have been completed, and operations were scheduled to start July 8. The repairs consisted of new cutting tables and some new brick-making equipment. The capacity has been

Perforated Steel Screens



For Screening Clay, Shale, Sand, Gravel, Stone and Cement

All sizes and shapes of holes in metal of proper thicknesses to give the best screening results.

Sheets furnished flat or rolled to shape for revolving screens.

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635 N. Union Ave., Chicago, Ill.

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Buy "signed" valves
—with the Jenkins'
Diamond Mark and
signature on the
body.

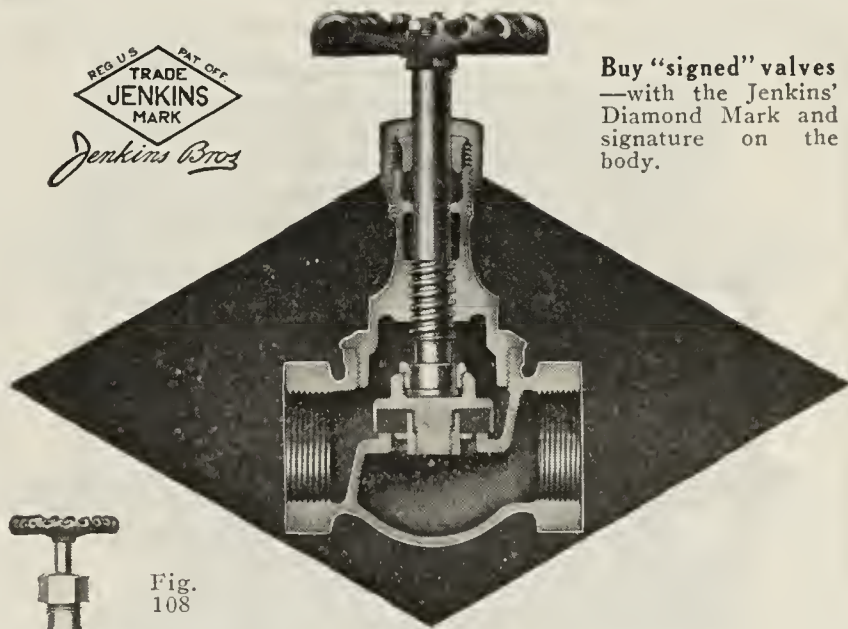


Figure 106

Jenkins Brass Globe Valve, standard pattern, for 150 pounds working steam pressure, or 250 pounds working water pressure. Fitted with Jenkins Renewable Disc which gives valve practically unlimited life.

At all supply houses.

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New York Boston Philadelphia Chicago
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FACTORIES: Bridgeport Conn.;
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Fig.
108



Fig.
106

Jenkins Valves
SINCE 1864 2311-J

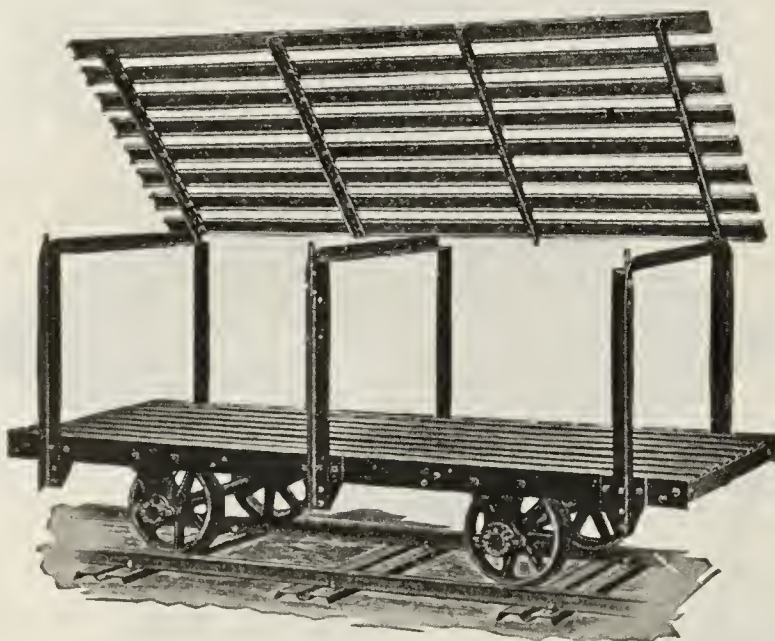


**HY-GRADE MANGANESE CO.
WOODSTOCK, VA.**

**Miners
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Grinders**

**Especially Prepared
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Lakewood Double Deck Car No. 167

**The Dryer Car That Dis-
criminating Users Demand**

BUILT FOR SERVICE



FRANK H. ROBINSON

Dryer Cars and Clay Working Equipment

Factory and General Office, Pittsburgh, Pa.

increased, and it is expected to run on a full capacity basis. Burton Boston is president and S. K. Day secretary and general manager. The executive offices of the company are in Chillicothe, with the Columbus Fire and Face Brick Co. of Columbus the sales agents.

Buys Vast Tract of Clay Land

The Tidewater & Western Co., Martins Ferry, Ohio, has purchased from the Castle Craig Development Co. of Knoxville, Tenn., 28,515 acres of clay and coal land in Laurel, Pulaski and Whiteley Counties, Kentucky for \$4,200,000.

It is estimated the tract contains 200,000,000 feet of virgin timber besides 285,000,000 tons of coal and clay. No immediate development is anticipated. The officers of the company are residents of Steubenville, Youngstown and Martins Ferry, Ohio.

School Buildings to Take Brick

One of the biggest jobs in sight for Ohio producers is the half-million-dollar hotel building at Middletown. A school building at Revanna, to cost about \$250,000, will also soon come up. There will be two large grade schools in Columbus ready to be let in September or October. These are the Poplar Ave., and the Clintonville schools. The award of two large brick schools at Xenia, Ohio, is announced. The two buildings will aggregate about \$450,000.

The contract for a school building at Bexley, a suburb of Columbus, has been awarded, and this work will start soon. Several churches in Columbus are contemplated.

Demand for Building Brick Increasing

That the demand for brick for building purposes is on the increase is reflected in reports from the office of John H. Burns, treasurer of the Continental Clay Co. "June has been our best month since operation under the consolidation of the various plants," Mr. Burns said. "We are making more building brick than any other product and from present indications this line will be given the preference so long as the demand continues strong. It is my opinion that building shows signs of revival and that brick manufacturers will get their share of the material entering into the building."

The Continental Clay Co. operates several plants in the vicinity of Canton, Ohio, and is fast becoming one of the largest manufacturers of clay products in the state.

Metropolitan Reduces Price

The Metropolitan Paving Brick Co., Canton, Ohio, has reduced the price of paving block from \$30 to \$27 a thousand. The new price compares with a high of \$35 around the turn of the year and so represents a decline of over 20 per cent. from the peak. The company does not market its building block direct except as No. 2 paving block are used for such purposes. It is expected that the reduction on paving block will similarly affect the market price of other grades of brick made by the company. Kilns of the company at Bessemer, Pa., are operating about 75 per cent. of capacity. Increased inquiry is being noted. It is expected the price reduction will stimulate further inquiry.

Buckeye Capital Building Permits Increase

Building operations in Columbus during the month of June were fairly active when the industrial depression is taken into consideration. The same is true of permits issued during the first half of the present year. During June the Columbus building department issued 450 permits, having a valuation of \$1,089,700, as compared with 288 permits and a

valuation of \$1,039,495 in June of last year. During the first six months of the year the department issued 2,529 permits, having a valuation of \$5,264,530, as compared with 1,495 permits and a valuation of \$5,695,230 for the corresponding period in 1920. The department issued permits for 121 dwellings in June, 1921, as compared with 105 in May of this year and but 19 in June of last year. Indications point to a rather steady progress in building in the Buckeye Capital during the remainder of the summer.

Secures Splendid Orders for Face Brick

While individual brick contracts are not particularly large, those interests who are going after the business hard are able to book a comfortable volume on combined orders. Conspicuous example of this is the recent closing of a total of 112,000 brick for the Keith theatre building in Cleveland by the Hydraulic-Press Brick Co., this including Equitable grays and enamel brick, the one for exterior and the other for the stage. The same firm is booking in distant localities, shipping from the South Park plant adjacent to Cleveland. A Kent (O.) school is taking 200,000. A school project at Aberdeen, South Dakota, requires close to 100,000 full range Bokharas. A good order has been shipped to Buhl, Minnesota. Some residence work in Norfolk, Va., is taking various face brick for this purpose. Considering the high freight rates, it is the opinion of Arthur S. Fielding, Cleveland district manager, that the requirements for face brick from these distant points is a good indication of a turn for the better in this branch of the building industry.

Cleveland Building Situation Clearing Up

Present indications are that there will be no further hitch in building operations in Cleveland, Ohio, as an aftermath of the strike in the building industry during May. Since the new wage awards by arbitration, giving the operatives an average reduction of 17 per cent. from war time wages, plasterers have refused to accept the new lower level. At a joint meeting of plasterers' and contractors' representatives and international officials, operatives agreed to accept the arbitrator's \$1.04 award. Plasterers consequently were prepared to return to work July 5. This means that any holdup in building operations, due to no plastering work going on, is eliminated.

Combined with the final settlement of wage disputes in the building trades, comes the additional improvement in the building industry by the fact that much more brick construction has been planned during June this year, over that of the same month a year ago. In June, 1920, only eight brick dwellings, valued at \$65,000, were planned, while during June this year 17 dwellings, valued at \$158,000, and 10 brick apartments, valued at \$262,000, have been decided upon.

Sell Millions of Face Brick

That 1921 will reward fighters, is again in evidence since it is reported that the Pearson Brick Co. of New Castle, Pa., recently booked orders for 3,750,000 face brick. It is said that it will require over 500 railroad cars to transport this material. The buildings in which this brick will be used are mostly high and grammar school structures.

Conveyor Destroyed by Fire

A large brick storage shed and electric conveyor line was destroyed by a fire which visited the Hazelton (Pa.) Brick Co.'s plant recently. The shed was 240 ft. long and was used for storing brick. The electric conveyor line was used to trans-

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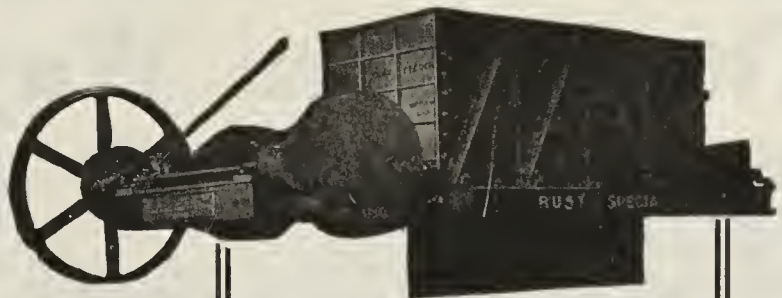
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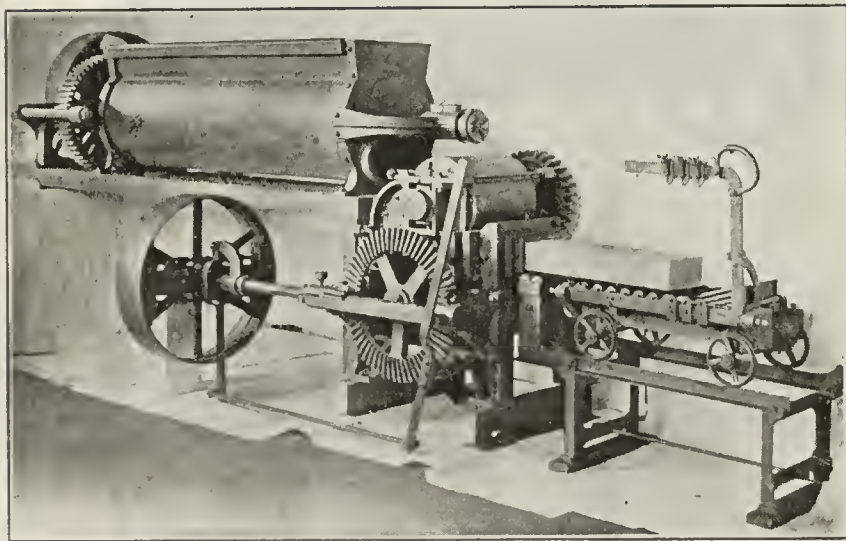
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fer coal from the railroad cars to the plant and is reported to be a total wreck. It is estimated by H. L. Campbell, of the Hazelton Brick Co., that the damage amounted to \$7,000.

Pennsylvania Concern Asks for Charter

Application for a charter for the Pennsylvania Slope Brick Co., Reading, Pa., has been made, the object of which is to manufacture brick of all kinds, tile, and so forth. The company is capitalized at \$50,000. The incorporators are: Lewis H. Rothrauff, Harry R. Brenneman, Frank E. Wert, August F. Kostenbader and Chester A. Smith. The plant is located at the Northside.

Aid Employees in Getting Homes

In line with its policy of providing employees with opportunities for owning their homes, the National Tube Co. has made arrangements for extending its efforts in McKeesport, Pa. Forty acres, facing Fifth Avenue, and adjoining the Chester plan site have been purchased. The company will sell lots on easy payments provided purchasers build within a specified time. It also will build houses for employees, to be paid for in installments. The property will be improved immediately.

Digs Brick Right from Ground

George Raible, of McKeesport, Pa., bought a parcel of ground in that city and set at work a gang of excavators who had not been engaged a great while until the steam shovel brought up a load of brick. Investigation showed that the lot was almost full of brick that had never been used. They were in perfect condition and perhaps a half century old. They were carefully removed and will be used in a building Mr. Raible is having erected. They were valued at about \$1,000. Old-time residents are puzzled over the presence of the brick, but are inclined to believe that a brick yard once operated on the site.

Brick Paving Common in Pennsylvania

Road construction thruout the counties of western Pennsylvania is in full swing. Many men from the mines and steel mills, most of which are closed down or working on low production basis, are finding employment in road projects. A contract has been awarded to H. P. Streicher Co. of Toledo, Ohio, for 23,957 feet of one-course, reinforced concrete and hillside vitrified brick, 16 feet wide, in Oakland, Sugar Creek and Cornplanter townships, Venango County, for \$250,763.20. The county will pay the entire cost.

Work has started on the twelve-mile road from Connells-ville-to-Farmington highway in Fayette County by a construction firm of Binghamton, N. Y. The new road will be 16 feet wide, of four-inch hillside brick on a five-inch concrete base. It is to be completed by November 15.

Derry township, Westmoreland County, road supervisors have awarded a contract for a brick and concrete road from the Derry borough line, to cost \$31,175.75. The successful bidder was the Mt. Pleasant Construction Co.

Permits Increase, But Labor Holds Back Work

But little change has taken place in the Pittsburgh, Pa., brick market in the past two weeks. It continues dull, but with some prospects of brightening. Building seems to be in the way of becoming normal in spite of the strike of the building trades unions, which has completed its fourth week.

Permits issued by the city bureau of building inspection

for June of this year were 455, for work to cost \$1,179,917, as against 392, for work to cost \$921,859, for June of 1921. For the past two weeks 179 permits were issued, for work to cost \$732,232, more than \$200,000 in excess of the previous weeks. Permits totalling \$243,947 were issued during June by the building inspector's office of Altoona, breaking all previous records. Brick construction holds the preference.

The labor situation is a little better than formerly, the Builders' Exchange announces, due to the fact that members have several jobs running on an open shop basis. Nobody is suffering, they say, on account of not having enough men to go ahead with their work. The first break in the ranks of the building trades assembly in New Castle, Pa., which have been on strike since April 1, came last week, when nearly 100 bricklayers returned to work.

Making Brick on a Mountain Side

One of the picturesquely placed brick factories is that of the Johnstown (Pa.) Brick & Tile Co. It is located about 500 feet above the city, on the steep side of a mountain. In securing material for brick making it is eating off the top of the mountain of shale rock, which is sent down to the factory thru a steep chute 350 feet long.

This company was formerly the Johnstown Face Brick Co., which was making brick in rather a small and crude way. The company was reorganized under the present name, and the works entirely rebuilt. The last kiln of the new plant was completed in December, 1920, and this is the first year of brick making. The entire output of about 5,000,000 brick is disposed of locally. The company claims to be supplying ninety per cent. of all the face and common brick used in Johnstown and vicinity.

Each one of the new rectangular kilns holds about 125,000 brick, and a general turn-over is made about once in three weeks. About one week's burning is required under the new system.

In the delivery of brick, two 3½ ton trucks are kept busy; but there is also a good yard trade, the buyers hauling their own brick. The concern is planning to build a new kiln next year and is considering the construction of an incline.

High Freight Rates Crowd Out Country Manufacturer

The high freight rates on brick and the attendant cost of handling, in many localities, are forcing somewhat of a shift in the making of building brick. An illustration of this is given in the present improvements being made in the plant of the Harrisburg (Pa.) Shale Brick Co.

H. C. Mills is owner of a brick making plant at Speeceville, and is a large stockholder in the Harrisburg Shale Brick Co., of which he is also the manager. Speaking of the high cost of transporting brick by railroad and its effect, Mr. Mills said, "I am not doing much with the plant at Speeceville, where we are running very light. The cost of transporting brick from that plant to Harrisburg, which is our natural market, is so high that we cannot successfully compete with brick manufactured in and around Harrisburg. It costs us about \$6 per thousand to get Speeceville brick delivered in this city, and that is about as much as brick used to sell for in the prewar period. It has had the natural effect of causing me to turn my attention to the manufacture of brick in Harrisburg, where all brick can be delivered by trucks right onto the jobs. So I bought into this plant and we are making big improvements here, which will both increase our capacity and reduce the labor cost. I figure that our labor cost will be at least \$25 a day less than it is at the present time, because of the greater use of machinery. At the same time the quantities of brick produced will be very much increased.



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Duffney Brick Co.,
Mechanicville, N. Y.

• "OUR ERIE has more than paid for itself in 10 months and is as good as new. We are averaging 360 cu. yards a day in tough blue shale." J. M. Purcell, Pres., Duffney Brick Co., Mechanicville, N. Y. (They now own two ERIES.)

The ERIE gives steady, reliable service digging stiff clay or hard shale. A careful comparison of steam shovels will convince you that the ERIE is the shovel to buy.

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R. H. Precipitated Carbonate of Barytes

You can safely guarantee that your brick will be

Scum-Proof

You can get a higher price and influence architects to specify your product because Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's dependable.

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"PEABODY FOR SERVICE"

"We are going to put in a new brick mill. It will use material right from the bank here, dug by a Bucyrus shovel. The cars will come back from the bank by gravity, and their contents will be dumped automatically. After crushing, the dust will be dumped into a storage bin having capacity to hold enough dust to make a half million brick. As our capacity is to be from 40,000 to 50,000 brick a day, this dust bin will hold enough material for a ten days' run at maximum capacity. It is a plan to prevent the stoppage of brick making by such contingencies as the machinery breaking down, bad weather, pit troubles, and anything else that might interfere with our supply of material. We plan to keep the bin full all the time, always using the oldest dust. This also gives the material some time in which to weather, which I find is a good practice.

"We plan to finally abandon the up-draft type of kiln. A little later in the season, probably this fall, we shall put in a continuous kiln, as I think that is the type that will give us the best returns for our expenditure of money and effort. We are planning to run continuously about ten months in the year, shutting down thru January and February. We shall, however, keep everything in readiness to run during those two months if the necessity arises."

The dryer that forms a part of the equipment is unusually well built and has a capacity of 120,000 brick. It is heated by exhaust steam from a 300-horsepower Corliss engine supplied by four boilers.

Bricklayers Reduce Wages Voluntarily

The local bricklayers union of Denton, Texas, recently voted to voluntarily reduce the present wage scale from \$12 to \$10 for an 8-hour day. The vote for the reduction was unanimous, it is said.

Washington Plant Doing Well

The Washington Brick, Lime & Sewer Pipe Co. of Spokane, is enjoying very good business. A. B. Fosseen, president, stated that in a recent investigation made by his concern, it was found that a brick house could be put up at practically the same cost as one of frame by using common brick and hollow tile backing. Yet, Spokane has not the brick homes that it should have and will have as soon as the public is fully aware of the cost of a frame building as against that of brick or hollow tile building, says Mr. Fosseen.



The LETTER BOX

A Place Wherein Letters
That Have General Interest
Are Published and
Commented Upon

A Word from an "Anglo-American"

An interesting communication was recently received from Frank Sharples, of Prenton, England, who says:

"I am an old 'Anglo American.' Chicago about forty years ago was about as familiar to me as my own home city, Liverpool. I am at present constructing a brick, tile and terra cotta works just outside of Liverpool, consequently, *Brick and Clay Record* keeps me in touch with the progress of your great country, and often reminds me of many friends I formerly knew, in the by gone days, over there. Altho an Englishman, my training for the most part is American.

My experience teaches me that the difference between the two countries is very slight. I am absolutely at home in both without an effort."

* * *

Why Not Use Ideal Wall for Silo Building?

Letters on the Ideal Wall continue to pour into the office of *Brick and Clay Record*. It seems that this idea for wall construction has aroused the interest of the entire clay products industry and many of the letters received contain valuable ideas and suggestions regarding the hollow wall type of construction. The letter printed below, from Geo. K. Clark, president of the Gold Brothers Brick Co., Big Stone City, South Dakota, contains a suggestion for the use of this kind of wall which deserves considerable thought.

I have been very much interested in your articles on the "Ideal Hollow Wall."

The thought occurred to me that this would be an ideal construction for silos, bringing the inside brick close together and spreading the outer course, and tying in the wall every eight inches. If it would be damp proof and frost proof in a house why should not its use in silo building be just as practical?

* * *

Do Brick on Edge Spoil Beauty of Wall?

In the issue of May 31, *Brick and Clay Record* printed a letter from J. H. Dolan, superintendent of the Illmo (Mo.) Pressed Brick Co., in which he states that laying brick in the wall with the flat side out, according to the method used in the Idea Wall construction, destroys the real beauty of brick. He also stated that the labor required in the building of such a wall was twice that required in an ordinary wall.

Taking exception to these remarks, L. S. Collins, general manager of the Los Angeles Brick Co., the company that was one of the sponsors of the Ideal Wall, has written the following letter:

I have just been reading the letter of J. H. Dolan concerning the Ideal Wall and cannot help but feel that some of his statements have been made without proper experience with this wall.

There have been hundreds of houses built with this wall in southern California within the past year and data gathered from a number of these show that a bricklayer after he becomes familiar with the Ideal Wall will lay as many brick as in a solid eight-inch wall and use twenty-five per cent. less mortar per thousand brick. Mr. Dolan's method of laying requires fourteen standard brick to the foot, the Ideal Wall requires nine brick to the foot. Surely this shows a saving very conservatively estimated of thirty per cent.

I beg to differ with Mr. Dolan's statement that laying brick on edge destroys the beauty of common brick. I grant it has been the custom to lay brick flat for hundreds of years, so was it the custom to take our Sunday afternoon ride with horses until some one invented the automobile about twenty-five years ago, or to cross the country with oxen until the railroads were built.

The state architect of California designed a residence for the superintendent of one of its institutions a little more than a year ago, before the Ideal Wall was prepared. He specified kiln run common brick to be laid with the flat side out in a solid brick wall. This residence is considered one of the finest examples of brick work in southern California. I understand a number of residences have been built by the same method on Long Island near New York. These have created a great deal of favorable comment. I have talked to a few of the leading architects in different parts of the country and they all express their approval of the larger exposed unity. One, a very prominent architect of Chicago, suggested the laying on edge of the soft-mud common brick with the rough side out. He maintains this texture kiln run with variegated colors would be most pleasing.

Mr. Dolan's idea of laying a four-inch wall with one-inch air space is very good, but why not use the Ideal Wall with its saving and encourage building of more permanent homes in this great country of ours?



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Fills the prescription for
ECONOMICAL FUEL
HIGH CARBON
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GREATEST HEAT

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The BUILDING SITUATION in the EAST

CONSTRUCTION OPERATIONS in the eastern districts are gaining. Each week is bringing additional activity of worth-while moment, and despite the dissensions of those pessimistically inclined, building records in different leading cities show an upward trend. The outlook is growing decidedly more encouraging and to all appearances the construction industry is tending more and more towards normal.

As previously noted in recent issues of *Brick and Clay Record*, housing work is taking the lead over all other forms of construction, and there is a defined movement in this direction thruout the New York district that shows no signs of waning. The rapid development is making industrial construction a matter of considerable concern and it is therefore with no little interest that a recent nation-wide survey made in this line by the Detroit Steel Products Co., is being closely scrutinized by those in this branch of the industry. This canvass was made among architects, engineers and contractors.

RESULT OF QUESTIONNAIRE

Taking the results in the New England and Middle Atlantic States, here is the way the answers size up:

Q.—Why should industries build now? A total of 18 see no reason for building; 12 reply that they should not build now; 37 say that industries should build now.

Q.—Is your section overbuilt in industrial buildings? A total of 18 say "yes;" and 41 say "no;" 3 reply as "under-built," and 5 report "about normal."

Q.—Is the volume of industrial contracts being let right now greater or less than it was at a given time during the past three months. An aggregate 14 report "greater;" 31 say "less;" 21 remark "the same;" and 3 say that they "don't know."

Q.—What do you think is needed to make prospective builders go ahead with plans. The replies here are distinctly illuminating, and are as follows:

(a) Settlement of labor disputes, 16; thruout the entire country, 33.

(b) Lower material prices, 26; thruout the entire country, 83.

(c) Lower labor costs, 27; thruout the entire country, 83.

(d) Lower freight rates, 6; thruout the entire country, 18.

(e) Easier credits, 11; thruout the entire country, 46.

(f) Stabilization of prices, 13; thruout the entire country, 48.

(g) Increased confidence, 11; thruout the entire country, 30.

(h) Better general business conditions, 6; thruout the entire country, 14.

Q.—Do builders feel that there will be a further reduction in the price of building material? In the cost of building labor? A total of 46 answer "yes" from the New England and Middle Atlantic districts, and 21 "no," to the first question; while 51 answer "yes," to the second query, and 16 "no."

Q.—What, in your opinion, is the level at which building costs will become stabilized as compared to 1913? In this there is a wide variance of opinions, ranging from 10 per cent. to 100 per cent., the 50 per cent. level showing the greatest number of replies.

Q.—Do you expect an increase in factory and industrial

building activity this year? If so, will it be sudden or gradual? When do you think it will begin? The replies are highly interesting, and are as follows:

(a) Yes, 29; thruout the entire country, 80.

(b) No, 28; thruout the entire country, 103.

(c) Gradual, 28; thruout the entire country, 73.

(d) Sudden, 0; thruout the entire country, 3.

(e) Slight, 7; thruout the entire country, 16.

(f) Summer, 6; thruout the entire country, 18.

(g) Fall, 11; thruout the entire country, 25.

(h) 1922, 7; thruout the entire country, 26.

A survey such as this in the housing line would be equally interesting, and no doubt will be made by those interested in such branch of the construction industry at a reasonably early date. It would show much difference in certain instances cited above, for the betterment in this line is prevailing and has not come so very gradual, either.

NEW ENGLAND DISTRICT

The situation during the past fortnight shows a keener trend towards stability, both in the matter of material prices and labor. Conditions as a whole are rather featureless.

In the different Massachusetts cities, there is a noticeable increase in the use of brick for current operations, and this material is easily the leader in certain sections in point of call.

PRICES HOLD UNIFORM

The price situation shows no important change. Common brick holds at from \$18 to \$20 a thousand, delivered in the Boston district, while at Providence, R. I., \$28 to \$30 is still the prevailing level.

Face brick is selling from \$37 a thousand upwards in the Boston territory, and a shade or two higher in Providence. Fire brick has found its summer level at \$75 and \$80 in both localities, altho Providence dealers are asking as high as \$100 for very high-grade stocks.

Other burned clay products maintain substantially the same as the figures quoted in the last issue of *Brick and Clay Record*.

EMPLOYEES ACCEPT WAGE CUT

Slowly but surely the labor situation is righting itself in the different New England districts, and reports from important cities show that the men, back on the job, have become reconciled to reduced pay.

The latest city to fall in line is Holyoke, where a strike has been in progress since April 1. The men have returned to work, signing an agreement making the 1919 scale of wages operative, or a reduction of 15 cents per hour as compared with the recent schedule. Carpenters at Northampton have returned to their jobs, also, agreeing to a like reduction.

NEW YORK MAINTAINS ACTIVITY

Building operations in the line of new apartments, houses and tenements continue to hold the bulk of attention in the construction industry at New York, and speculative building in this line is extending to encouraging proportions. Bank loans are easier, and there is a general attitude of confidence in this branch of the business that is making for a general improvement in the situation. No immediate let-up is in sight in the Brooklyn, Bronx and Queens districts.

"We believe that these times more than ever demand of all of us **THRIFT, INDUSTRY and HONEST SERVICE.**" We began our last advertisement here with these words and we may begin the next one the same way. We believe it is good to repeat such homely sayings.

One thing that "Honest Service" means to us is proper preparation of our product. Nature has made Indiana Fourth Vein Coal an excellent fuel for your use and we are fortunate in having some of the best that she has produced. We add to this, as a part of our service, human intelligence and modern machinery in cleaning, sizing and preparing our coal to meet your needs. We want to make new friends by truly serving them and we hope to hold our old ones in the same way.

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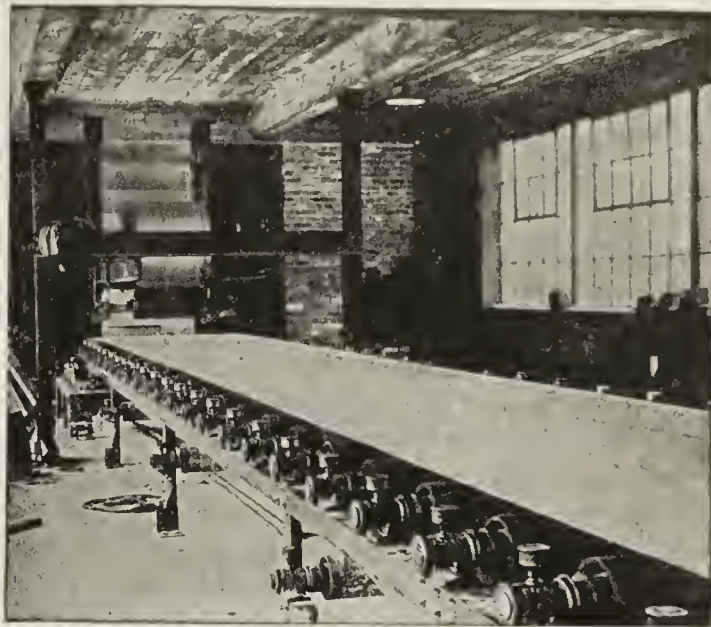
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TO MEET THE DEMAND THAT IS SURE TO COME EQUIP YOUR PLANT WITH WELLER MADE MACHINERY TO HANDLE THE RAW MATERIALS AND FINISHED PRODUCTS MECHANICALLY. OUR ENGINEERS ARE AT YOUR SERVICE TO ASSIST IN THE SELECTION OF EQUIPMENT TO MEET YOUR REQUIREMENTS.



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A MOVE FOR WAGE REDUCTIONS

New York has been one of the quiet spots in weeks past with regard to lower wages for employes in the industry, and while a number of cities nearby in New England and New Jersey have been working in this direction, it is only now that the effect of the concerted action on the part of employers is awakening Father Knickerbocker.

The local Building Trades Employers' Association, however, has given attention to the matter, and negotiations are under way with the different union leaders for a recognized reduction approximating \$1 a day, or the amount awarded to employes about a year ago on account of increased cost of living. Just what percentage of reduction will be decided upon is now rather a matter of guesswork, and labor is being urged to make the definite move in this respect. It is currently reported that with a goodly number of men out of employment in the industry in this section, it is certain that a wage reduction of close to the amount noted (\$1 per day) will be acceptable, particularly if the decrease serves to increase the amount of general construction, as now anticipated.

MATERIAL PRICES FIRM

There is a general firmness to price quotations in the New York material markets, and it seems evident that existing levels of brick and other basic commodities will remain at close to present figures thruout the summer season.

The call for brick is increasing, and market activity during the past fortnight has been quite encouraging to the producers. The \$15 level per thousand alongside dock is rather a rigid figure, and there are few if any variations. There are no quotations on Raritan brick, and second-hand material is being turned at \$45 for 3,000 brick, delivered, or pretty close to the price asked for new brick in wholesale lots.

More cargoes are reaching the city from the Hudson River yards, and some of this year's production is being handled. The average boat loads are from 30 to 35 weekly, and practically this same number of cargoes is being absorbed, leaving but little unsold material in the market. The bulk of distribution is divided between Brooklyn and Manhattan.

A general average of what face brick dealers are now asking for material may be summed up as follows, the figures being for delivery on the job:

Rough and smooth red, \$45 a thousand, upwards; rough and smooth buff, \$48 and \$50, upwards; rough and smooth gray, \$51 and \$53, upwards; Colonials, \$45.

Interior partition tile shows no change from levels recorded in the last issue of *Brick and Clay Record*, while fire brick, flue lining, wall coping and other specialties hold substantially the same as in past weeks. The call for such materials shows a little increase, but not to a point of any great encouragement for the dealer.

NEW JERSEY CITIES INCREASE WORK

Northern New Jersey is growing considerably more active in construction operations, and a survey of the situation indicates a fair promise for further increase in the weeks of summer to come. Newark, Jersey City, Paterson, Passaic and Bayonne are holding up totals well, while in other parts of the state, notably at Camden, there is a keen aspect to the status of things.

Newark is taking and maintaining a lead in a revival of housing work, and each week is now rounding out totals of well over a half-million dollars. New dwellings are becoming the popular thing here, with a school building program of \$500,000 and other public work looming up to inspire still more confidence in the outlook. Industrial building, on the other hand, is lagging woefully, and no one is optimistic enough to prophesy resumption in this direction any definite time ahead.

Suburban districts, such as the Orange, Montclair, Irvington and Bloomfield, continue to progress in building operations, with brick apartment houses representing the center of attraction.

LABOR STILL HANDICAPS CONSTRUCTION

The settlement of labor difficulties at Newark by arbitration, as noted in the last issue of *Brick and Clay Record*, is not making quite the progress as anticipated and another lock-out of carpenters and other trades is threatened. These men have returned to work, agreeing to settle their differences with an arbiter, but are now delaying matters by procrastinating action, in the meantime securing the high wage scale that has been prevailing in months past. The men give the plea that they cannot agree with their arbiters.

The situation at Trenton is clearing in an encouraging way and it is expected that a definite settlement will be arranged between the employers and the men, on the basis of the findings of an arbiter, at an early date. Full crews are back on the job, and current work is proceeding.

BRICK PRODUCERS ACTIVE

All the seasonal yards at Hackensack and Trenton are now operating, and while production is not at a "peak" point, yet sufficient quantities of brick are being manufactured to handle all immediate demands. The Independent Brick Co., Trenton, is concentrating activities at its Bordentown plant, and a number of improvements are being made at the other yards.

Prices show no change. The material is bringing around \$18 and \$19 at the kiln, with \$22, the popular figure for delivery on the job in the different districts. The call upon the Hackensack district from northern New Jersey is far better than the prevailing demand at the Trenton yards from their points of supply, but indications tend to increasing distribution in the latter section at an early date.

Face brick holds at levels varying from \$40 to \$60, according to nature of the stock, and fire brick shows no change from a \$75 a thousand, prevailing average figure.

STRIKE STILL ON AT PHILADELPHIA

The building strike continues at Philadelphia, and after weeks of parley and delay, there is no indication of early settlement. The men are holding out tenaciously for a maintenance of the former high wage scale, with employers, on the other hand, making every effort towards a reasonable settlement.

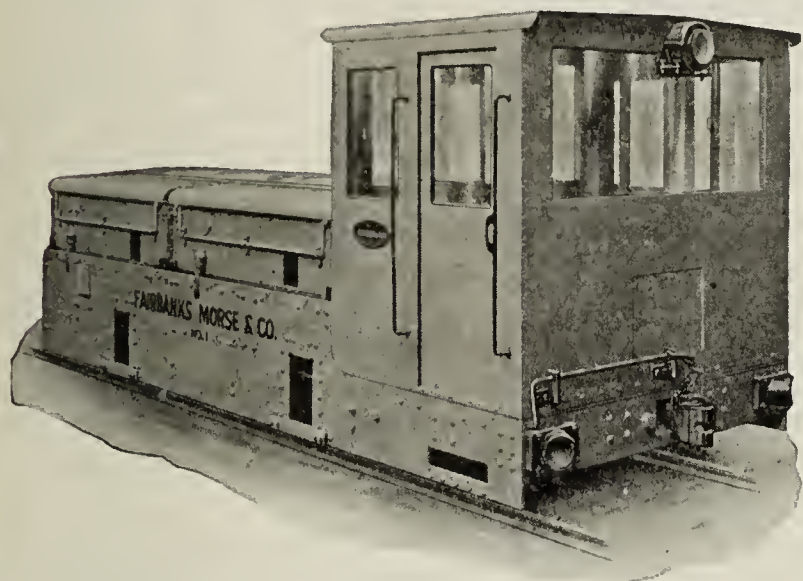
The Industrial Relations Committee of the local Chamber of Commerce estimates that as a result of the strike about 200,000 persons are living on what they have managed to save, or are going deeper and deeper in debt. It is pointed out that it is distinctly a public interest that construction be resumed at once, and that if the strike is not ended early in the present month, the result will be the killing of any considerable amounts of construction for the entire season, effecting lack of work for labor in the industry, and lack of business for contractors, builders and material men.

CONSTRUCTION SLOW

As to be expected, construction activities are moving very slowly in Philadelphia. While a fair amount of new building work is evidenced by plans filed at the local building department, yet considerable of this work cannot go ahead on account of the strike, and actual operations are largely curtailed. The need for new housing accommodations is growing weekly in this section, and many old houses are now being converted into multi-family dwellings at the lowest possible expense to answer the need. The Philadelphia Housing Association says, in all justice, that Philadelphia is losing rapidly its character as a city of homes, and undeniably it is so.



Electric Locomotives



From 1 to 50 Tons

Have you noticed the ever-increasing number of clay operators who are electrifying their plants throughout?

There Are Reasons:

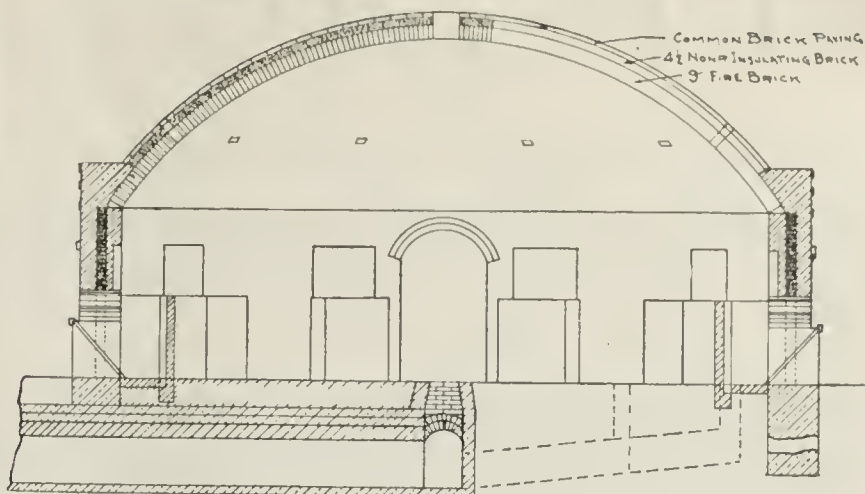
**Efficiency,
Reliability and
Low Maintenance**
are the main ones.

It is a large undertaking to change an entire plant, but it is a small matter to

Haul Clay the Electrical Way

Write for details—today

**Goodman
Manufacturing Co.**
48th to 49th Streets on Halsted
CHICAGO ILLINOIS



How Kilns Are Insulated

Of course, a kiln can't be covered like a steam pipe, but it can be insulated just as effectively. Nonpareil Insulating Brick are as well adapted to brick and pottery kilns as pipe covering to a steam line. Furnished in all standard fire brick sizes and shapes, they are built into the walls and crown—a permanent, integral part of the kiln itself.

Nonpareil Brick are so light in weight (only about 1.6 pounds each) that there is not the slightest danger of overloading the crowns even when used on old kilns. Their structural strength is ample to resist the strains of expansion and contraction. Nonpareil Brick will not break down at kiln temperatures when properly installed back of the fire brick.

The average kiln loses by conduction and radiation about 25% of its total heat. From 60% to 75% of this loss can be saved by insulating the kiln with a single 4½-inch course of Nonpareil Brick. The result is more uniform burning and a distinct decrease in the consumption of fuel.

By sending in your name and address, you may have, without charge, a sample brick and a copy of the 72-page illustrated book, "Nonpareil Insulating Brick." The need for insulation, its ease and economy as applied to brick and pottery kilns is interestingly explained.

Armstrong Cork & Insulation Company
149 Twenty-fourth Street Pittsburgh, Pa.

Nonpareil Insulating Brick
For Kiln Walls and Crowns

QUESTIONS *and* ANSWERS

The Best Authorities in Every Clayworking Branch are Called Into Consultation—Their Advice is Free to You, Thru These Columns

Hard-Burning Top Courses in Up-draft Kiln

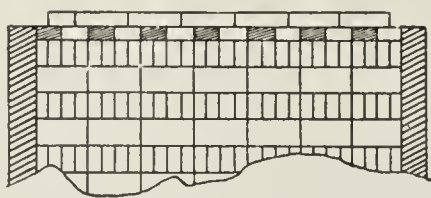
980. *Mississippi—We burn our brick in up-draft kilns, and our ware has considerable shrinkage. Unless we use cinders or dirt on top of the kilns, it is difficult to get the top courses burned hard. One reason for this, we think, is that the heat leaves too fast on the top after cutting off the fires. We burn with oil. We wonder if there is anything available like sheets of asbestos made for the purpose of putting on the top after the heat is raised to prevent it from going out too fast. If you know of anything of this kind, will you please advise us?*

This inquiry was referred to a ceramic engineer who replied: "It has always been a problem to get the top of an up-draft kiln hot. Not knowing your correspondent's methods, it is rather difficult to just dash off the answer. It is like some of those questions we had in ceramic examinations, where you had to think of and discuss everything that could possibly happen. If you care for it, I can give you a general discussion, but am afraid it will be rather lengthy.

"His method of using dirt on the kiln is not so far wrong as he imagines. It is absolutely necessary to have the top tight, and I know of no more effective way of doing it than using dirt. It is a nuisance but it does the work.

"In the first place, the up-draft kiln is the most difficult of all ceramic kilns to manipulate. The down-draft is a snap in comparison, and our continuous kiln is child's play with its every means of control at hand. In the up-draft, a successful burn depends to a great extent on the start, a good beginning is seventy-five per cent. of the battle because the distribution of the draft is made during the water-smoking period. But we will assume that your correspondent has no difficulties during this stage. Oil is easier to handle than coal. I will describe the method we finally decided to be the best.

"On top of the setting we placed platting and used only burned brick for the platting. Some manufacturers use green brick for platting, but it is wrong on account of the shrinkage



Method of Setting Platting of Burned Brick on Top of Scove Kiln.

and they are getting away from it. They should use brick from the center of a burned kiln—good square brick that will be loaded out from the kiln where they are used for platting. On top of the setting we placed rows of headers, also burned and laid flat, and placed the platting on these headers, thus:

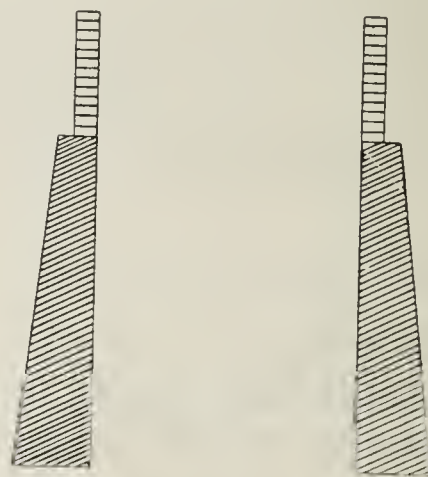
"The setters put the platting up each day after they had finished their day's setting. Before lighting the fires the burner went to the top of the kiln and 'up-ended' one brick in the platting every three feet each way over the entire top of the kiln. The brick up-ended leaves a hole thru the platting during water-smoke. As soon as visible steam disappears (the 'technical' term is that the hole will 'fry-spit') the brick

are placed back in their original position, and the top of the kiln is then entirely closed over.

The important feature in the water-smoking is to have as much of the visible steam as possible disappear at the same time. This is best accomplished if the brick are all dry when set. If the platting all goes down within twenty hours good results can be obtained. This means that the kiln conditions are practically uniform when hard fire is started. From this point on the fire boxes must be kept at even temperature; even then the kiln will often settle in spots and if this happens the platting can be lifted to even up the draft.

"As shrinkage follows, the top of the side walls must be pushed in to check the draft. This wall is called the push wall and is built on top of the stationary walls after the kiln is set.

"From the time hard fire is started, the heat thruout the entire kiln is held in check by the remaining physical steam together with the secondary or chemically combined water. If it were not for this secondary steam it would be practically impossible to burn an up-draft kiln. After the secondary steam



Showing Method of Building Push Wall on Top of Side Walls of Kiln. Brick on Push Wall are Exaggerated in Size.

passes thru the platting followed by the fire itself, the burner is all thru; he could fire until doomsday and the kiln would not get any hotter. For this reason the platting must be kept tight; if it can't be kept tight with burned brick dirt must be used. If the kiln goes very uneven and cracks appear on the top they must be covered over with sheet iron and closed up.

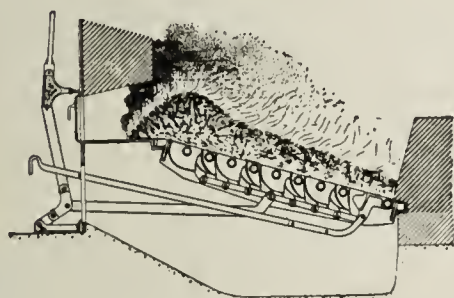
"Your correspondent says he thinks the heat leaves too fast after cutting off the fires. After the secondary steam is gone there is nothing to stop the heat from going also. He can burn no brick after the fire comes thru the top. Any fuel spent then is simply wasted. There are plants that use a low burning clay that cut the fires off after the kiln is hot only half way up. The kiln is then sealed tight and the heat is held down by the secondary steam and follows this steam upward. When this steam leaves the top the heat follows and the kiln is burned. Surprising results are obtained but the top is always underburned. I mention this to show the effective dampering caused by the steam.

"It occurs to me that your correspondent may be waiting too long to put the kiln on hard fire. It is better to put the

COKAL HAND STOKERS

In your kiln or boiler fireboxes, will save a considerable amount on your fuel bills, nearly half on labor, and they will eliminate the curse of hand cleaning methods.

Clay Plant owners have found that coal comprises about 25% of the entire cost of the output of brick. COKAL STOKERS WILL CUT THIS ENORMOUS COST TO A MINIMUM.



FIRING

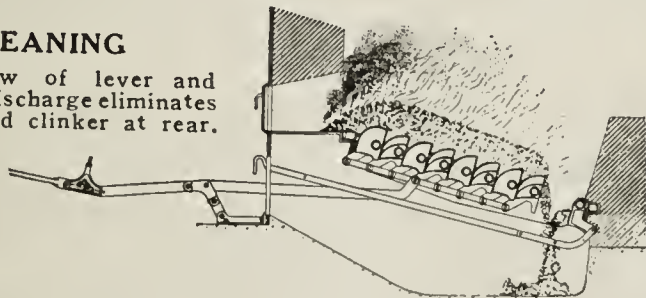
Fresh coal laid on front. Gases must pass over fuel bed.

COKAL HAND STOKERS are well backed by a large combustion engineering service department.

They Must Make Good

CLEANING

Full throw of lever and auxiliary discharge eliminates all ash and clinker at rear.



Write today and let us explain in detail just what the COKAL will do for you. Or better still, let one of our representative engineers call upon you with a regular working model. No obligation.

COKAL—The Simplest Stoker Made

HUNDREDS OF PLANTS EQUIPPED

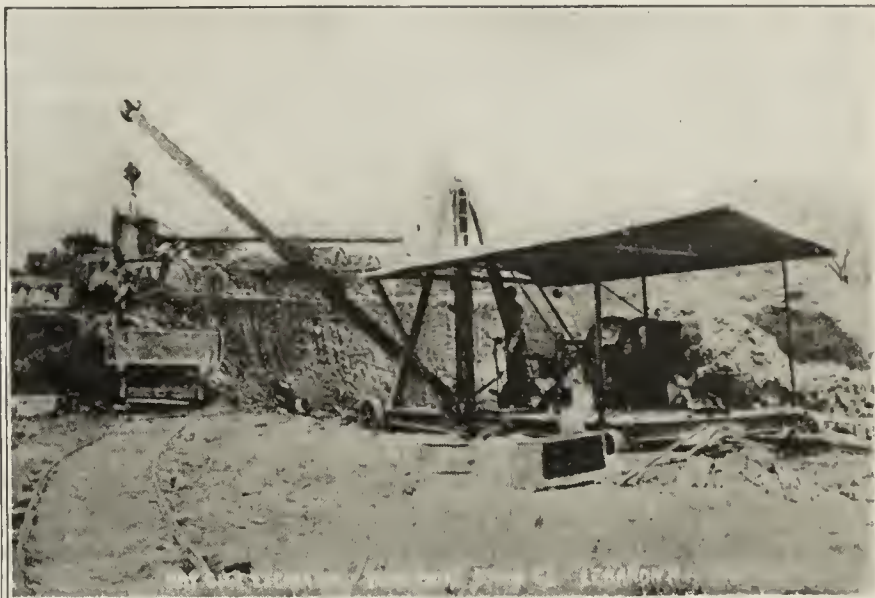
COKAL STOKER CORPORATION

1037 NORTH CLARK STREET, CHICAGO

Here It Is —

Mr. Clay-Plant Operator

The One-Man Excavator
for the Small Clay Plant



Heavy machinery is high priced and besides very expensive in fuel and labor, to operate. Hand labor is hard to get, inefficient and expensive. Costs must be cut in order for the Small Clay Plant to realize a profit. That is why the ONE MAN EXCAVATOR was designed for the smaller capacity plants.

**Light
Economical
Dependable**

Runs on gasoline in any kind of weather.

"Yesterday we had only two men in the pit and we got more clay to the machine than we ever had with eight men, and the operator could have handled twice as much clay if necessary." From a letter of Sept. 4th, Densmore Brick Co., Lebanon, N. H.

The One Man Excavator Will Pay for Itself in the Labor It Saves, in a Short Time.

Write for Complete Data

BAY CITY DREDGE WORKS

2619 Center Ave.

Bay City, Mich.

kiln on hard fire a little too soon than to wait too long. The secondary steam is on its way to the top before the visible steam leaves and the heat must follow the secondary steam very closely or the heat cannot be raised enough in the fire boxes to get the top hot. As a rule, I put the kiln on hard fire when the visible steam on top had thinned out and was disappearing in spots. The good sign is the fry-spit method. If the hole thru the platting is above the boiling point the platting can go down even if a little steam is still visible or the kiln can go on hard fire with some of the platting still up.

"This has been rather lengthy but it is hard to judge the difficulties when all the conditions are not known. I have used dirt on top, but it is seldom necessary. The up-draft kiln is O. K. I have made records for burning costs that would be a credit to any continuous kiln. Naturally, the burning temperatures are low, the temperature obtainable in the up-draft is far lower than on the down-draft, but the immense mass of material under fire makes for cheap burning. If your correspondent needs more information, ask for more detail, how high they set and his method of operation, etc."

✂ ✂ ✂

Prices of Hudson River Brick

977. *New Jersey—What was the average price per M of Hudson River hard brick in 1913 and 1914? What was the highest price reached between January, 1914 and December, 1920? Give month and year. Assuming the normal production of operations to be 100 per cent. what percentage do you consider production or operations today?*

The average price for common brick produced and sold in the Hudson River district as reported in the United States Geological Survey bulletin was \$5.50 for 1913, and \$4.90 for 1914.

The highest price at which common brick was sold delivered-on-the-job in New York city between January, 1914 and December, 1920 was \$30.75, which price was made on June 8, 1920 and thereabout. On February 17, 1920 the price rose from \$24.65 to \$30.45. The price subsided again in October when it was reduced to \$20.

It is rather hard to tell what the production is today in the Hudson River district. We know that not all the yards have started operations as yet, but it would only be a guess as to what percentage of normal production is being made. If we were to venture a guess we should place it at about thirty to forty per cent.

✂ ✂ ✂

What Produces Black Coloring on Brick?

981. *Wisconsin—We wish to purchase a transparent glazing slip or sand which will melt at a temperature around 1,000 deg. F. Will you be so kind as to inform us who manufactures glazing materials?*

Also, what is the metal-like appearing material which is mixed into the clay in many rough textured facing brick? We have reference to the black patches which seem to be some metal which has melted into the clay during the burning.

It will be necessary to combine several materials in order to get a mixture that will give you a transparent glaze. However, before going any further in this matter, we would suggest that you describe to us the purpose for which you wish to use this glaze, and it is possible that we can be of more help to you.

The metal-like appearing material which you have noticed in rough texture face brick is, we think, due to the presence of iron scales that are sometimes added to produce what is known as an "iron spot." Frequently too, it is due to flashing

at the finish of the burn and at high temperature and not from the addition of any foreign material. In buff brick manganese oxide is used to get a speckled effect.

✂ ✂ ✂

Drain Tile Men Meet to Drum Up Business

The board of trustees and the executive committee of the Ohio Drain Tile Association called to meet at Findlay, July 7, to discuss plans for stimulating business during the fall season. The executive committee consists of Leo Childs, Findlay; W. H. Lewis, North Baltimore, and W. P. West, Columbus.

✂ ✂ ✂

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

The Armstrong Cork & Insulation Co., Pittsburgh, Pa., make the following announcements regarding changes in branch office addresses:

Armstrong Cork & Insulation Co., Cincinnati, Ohio, removed from 1608 First National Bank Building to 1015 Broadway. P. E. Thomas, manager.

Armstrong Cork & Insulation Co., Boston, Mass., removed from 84 North Street to 14 Columbia Street (Station 11). F. W. Robinson is manager, succeeding A. L. Dorr, recently resigned.

Armstrong Cork & Insulation Co., Kansas City, Mo., address changed to 529 Lee Building instead of 529 Reserve Bank Building. This is not a removal but a change of the name of the building.

✂ ✂ ✂

Cleveland Office for Brown

The Brown Instrument Co., of Philadelphia, Pa., manufacturers of instruments for indicating and recording temperatures, pressures, speeds, operations, and drafts, have opened a branch office in Cleveland, 201 Reliance Bank Building, 1634 Euclid Avenue, to render their customers in the Cleveland district service in every way possible.

This now makes a total of eleven district offices, located in New York, Pittsburgh, Detroit, Cleveland, Chicago, St. Louis, Denver, Los Angeles San Francisco and Montreal and engineers from any one of these offices will gladly call at your plant to recommend the most suitable equipment for your particular needs.

✂ ✂ ✂

Opens Pittsburgh Office

The Roessler & Hasslacher Chemical Co., manufacturers of chemicals, known as "America's Leading Ceramic Material House," has opened a new district office at 307 Fulton Building, Federal Street, Pittsburgh, Pa.

Harry W. Smith, who has been in charge of the firm's office at Cleveland, for several years, has taken over the management of the new office. He will be able to keep in close personal touch with the clay products producers in and around this city. His territory will take in all of West Virginia, and Pennsylvania west from Altoona. Mr. Smith, as is generally known, has long been closely identified with the trade.

The Cleveland office is under the management of Carl Dittmar, who formerly has been in charge of the firm's Cincinnati office, which, with the Akron office, has been consolidated with the Cleveland office with the same headquarters at Cleveland as formerly. The company are still operating their East Liverpool warehouse at East Liverpool, Ohio, from which point they deliver the "A1 Products," together with the well known "R. & H. Precipitated Carbonate of Barytes," for the prevention of scum on clay products

BRICK and CLAY RECORD

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

THE NEED OF THE HOUR.

SO MUCH is being said about the need for the present high freight rates by the "poor" railroads. Thus far the propaganda being sent out by railroads has been fairly successful in squelching any tendency for public sentiment to assume a strong stand against present high rates. Comparisons have often been made to show how small an effect present high rates have upon the cost of the commodity. However, the railroads have been shrewd and clever enough to refer to light weight commodities where the freight rate forms but less than one per cent. of the cost of the object.

Never has any reference been made to heavy products such as building materials, but in the case of building materials which are heavy products, freight rates form from five to twenty per cent. of the cost of the product. This is especially true of clay products.

In the case of hollow tile, face brick and common brick, the high rates are affecting the sale of the product to the extent that builders are considering substitute materials which do not require as much shipping. Roads are not being paved with paving brick because of the high cost brought about by high freight rates on all materials that enter into road construction. Drain tile are not being purchased because the farmer cannot afford to buy them with freight rates as high as they are. The result is the railroads are not shipping drain tile and the farmer has less use for machinery and fertilizer if the land is not drained, nor can he ship as large a quantity of crops because of this fact.

All these situations result in a reduced tonnage of clay products handled by the railroads.

Further than this, it reduces additional tonnage that would be the result of the shipment of these products as in the case of drain tile where crops and machinery would be more generally transported.

The case is almost parallel to that of a family possessing chickens. If the family is hungry and they decide to kill the chickens there will be no more eggs from which to receive sustenance. On the other hand, were

the chickens preserved they could be the continual source of food.

The high railroad tariffs are defeating the purpose for which they were made. They are actually reducing railroad revenue instead of increasing it. One large face brick manufacturer is contemplating the purchase of a fleet of trucks for delivering his brick. They plan to cover a certain territory in a circle within a reasonable hauling distance. Present conditions have encouraged the shipment of cement to plants at available points for the manufacture of cement drain tile. These plants require but a very small quantity of cement which is shipped in cars and their output supplants the use of burned clay drain tile which would give much greater tonnage to the carriers.

At the present time there is agitation to place lumber on the free list so as to reduce the cost of frame construction with the hope of stimulating building. More money could be saved if freight rates were reduced, since for the average residence freight rates on brick alone amount to easily \$125. If the lumber, lime, sand, gravel, hardware, plumbing and other items were taken into consideration, it will be realized that a worth while saving is possible by a reduction in freight rates.

The distribution of clay products is one of the largest sources of income for the railroads. The present situation has been of long enough duration to show the fallacy of the present attitude of the railroads. They have been looking at the situation from a wrong point of view and were they to reduce rates and encourage the distribution of clay products, the result would be a greater movement of building materials—greater railroad revenue—and a boom in building construction. This in turn would revive business in general and bring about greater traffic in all lines. Certainly, the high freight rates will do the railroads no good if more manufacturers follow the plan of some and use motor truck transportation, or if builders use substitute materials which require no transportation, or if locally manufactured cement drain tile takes the place of

burned clay drain tile which must be shipped hundreds of miles in many instances.

* * *

FROM OBSCURITY TO RECOGNITION AND PRESTIGE

EVIDENCE that advertising is a great force in business, has been exhibited to common brick manufacturers in an unusual manner.

Doubtless, every reader has heard of "McCall Street," which has been prominently put forth by the McCall Magazine as a street thru the country upon which resides its one and one-half million subscribers.

In a recent issue of the Chicago Daily "Tribune," a full page advertisement which is reproduced on an accompanying page, was used by the McCall Magazine to emphasize its complete service to the home builder which covers every phase of planning, construction and decoration. The advertisement states that the 7,500,000 people that live on McCall Street are going to build 30,000 homes within the coming year and will spend \$145,000,000 for building materials.

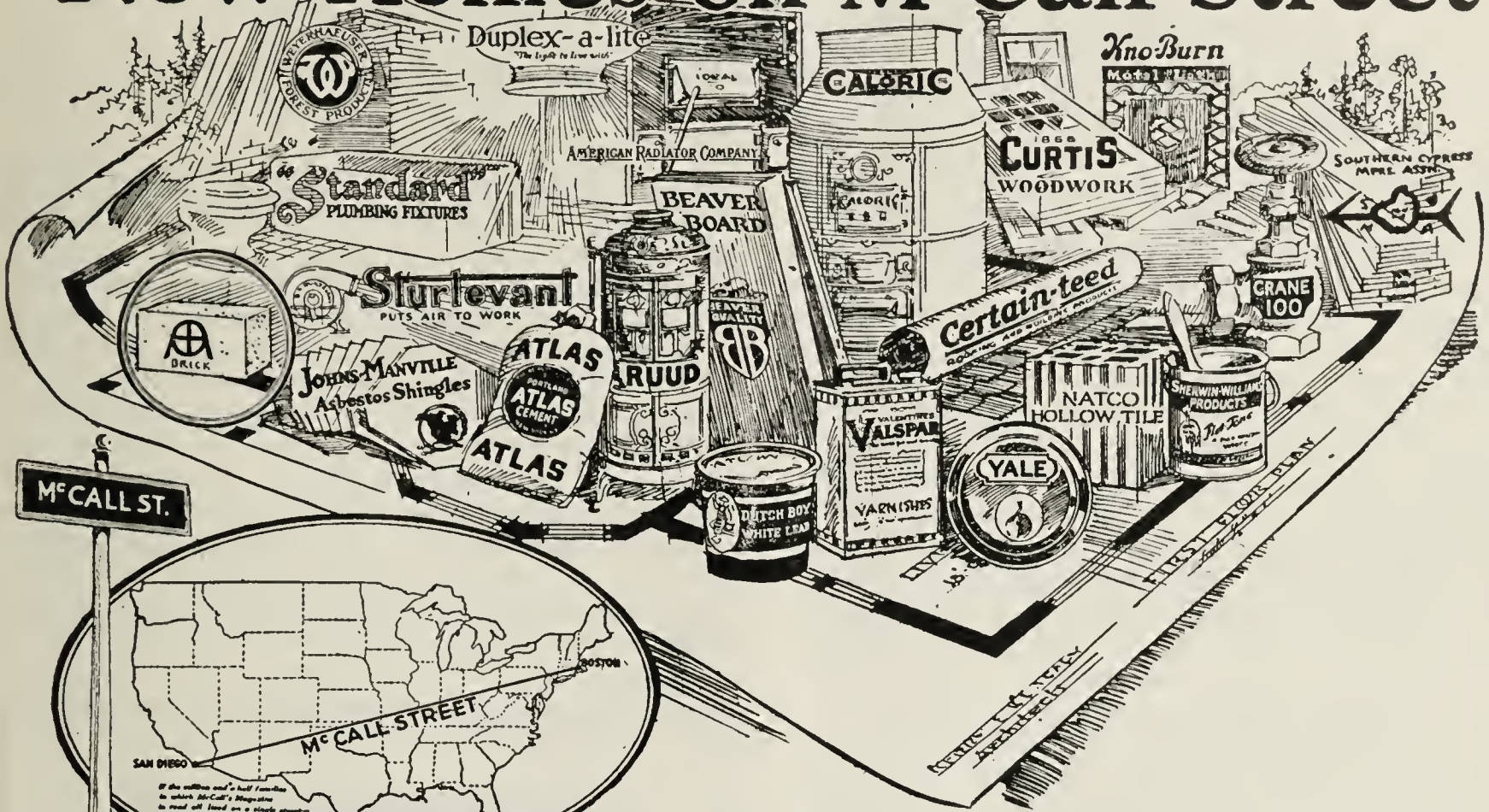
Illustrated in the upper half of this full page layout, is shown some of the best known building commodities. Nearly every one of these commodities—except one—has been advertised in national and building papers for many years. The one exception, however, is the one we have circled—namely common brick—which has been advertised during the short space of but two years.

In these two years, common brick has risen from a product of no recognition or confidence to a commodity with a public reputation and prestige all due to the fact that it has been trade-marked and given publicity. Formerly, persons who were uninformed, were under the impression that a brick house cost anywhere from twenty to fifty per cent. more than one of frame. Now they are beginning to learn that the difference in first cost is small if anything, and that in ultimate cost the brick house is cheaper.

Buying, manufacturing, selling—each of these is essential to the life of commerce but only selling is vital. Brick may be made without straw; but brick

CHICAGO DAILY TRIBUNE: WEDNESDAY, JULY 20, 1921.

\$145,000,000 Will be Spent for New Homes on McCall Street



How McCall's Helps Home-Builders

McCall's Magazine offers the prospective home-builder a complete service, covering every phase of planning, construction, and decoration. This service is based upon the soundest principles, correct and authoritative in every phase, and embodies the latest developments in the art of building and furnishing the home.

McCall Houses are designed by architects who have specialized in the planning of moderate sized homes. They are economical houses, combining the greatest possible comfort and convenience with spaciousness and beauty.

IN 1922, more than \$145,000,000 will be spent for building materials and accessories by the people who are going to build new homes on McCall Street—the visioned street on which are the 1,500,000 homes in which McCall's Magazine is read every month. This great sum does not include the cost of labor, but represents only manufactured products.

On this 3000-mile street, sweeping clear across the continent, there are 30,000 families who are going to build homes within the coming year. The 7,500,000 people who live on McCall Street also need new schools, churches, libraries—and these are going to be built too.

Below you will find some of the amounts which will be expended for building materials on McCall Street during the next twelve months:

Lumber	\$65,000,000
Paints and Paint Materials	20,000,000
Bricks	12,000,000
Plumbing Fixtures	9,200,000
Steam Heating Apparatus	8,800,000
Hot Air Heating Apparatus	4,400,000
Builders' Hardware	4,400,000
Varnish	4,000,000
Ready Roofing	3,200,000
Tin and Metal Roofing	1,000,000
Masonry, Glass, and Miscellaneous	13,000,000
Total	\$145,000,000

Just think of the hundreds of products necessary to the fitting up and furnishing of these new homes—the wall paper, linoleum, fireproofing, electric wiring and fixtures, ranges, window shades, awnings, screens. Not less than \$45,000,000 will be expended for these!

The families who read McCall's Magazine are up-to-date, progressive, wide-awake. They live in big cities, growing towns, thriving suburban communities. They keep in touch with progress—they want the newest and best, whenever and whatever they buy.

They know that nationally-advertised goods are the goods on which greatest reliance may be placed, because the man who puts national advertising back of his product thereby proves his own confidence in his own merchandise.

Your salesmen cannot call on all the people who are going to buy building materials, fittings and furnishings to meet McCall Street's needs—you cannot reach them all by letter or circular or catalog—but you can talk to all of them, every month, in McCall's Magazine.

THE McCALL COMPANY, 236-250 West 37th Street, New York City

Chicago

San Francisco

Boston

Atlanta

Toronto

McCALL'S

MAGAZINE

The Largest Circulation of Any 10-cent Magazine in the World

Best Reading—McCall's for August—Just Out

Robert W. Chambers writes in this number a breathless tale of young love, mystery, daring, and adventure. Kathleen Norris reveals her secret of happiness. Fiction and articles by such authors as Hoiworthy Hall, Princess Bibesco, Mary Synon, Anne Rittenhouse, Dana Burnett, Mildred Cram, and Richard Connell will enthrall you.

The New McCall Pattern "—it's printed"

Any woman who can read and sew can make clothes for herself and her children with the aid of the new McCall PRINTED Pattern. Thousands of women are proving this for themselves every day. Straight of the goods, how to cut, how to put together—all PRINTED right on the Pattern itself.

without recognition and a market were better never made. The accompanying advertisement is proof that com-

mon brick can be advertised effectively and results of the campaign conducted by the Common Brick Manufacturers

Association which has given brick a greater market and recognition is evidence of the value of the campaign.

A. C. S. CREATES OFFICE *of* FULL TIME SECRETARY

*Ross C. Purdy Appointed Full Time Secretary and Will
Take Office Immediately—Development of Society*

THE LATEST MILESTONE of progress passed by the American Ceramic Society, was the appointment of a full time secretary. Under contract dated July 1 and approved by the Board of Trustees July 8, Ross C. Purdy, who was well known thruout the industry, is employed as organizing secretary for the remainder of this year and as general secretary for the ensuing year, which office will absorb his present duties as organizing secretary.

It will be interesting to note the developments of this remarkable technical organization.

The germ thought that brought about the formation of the American Ceramic Society was under culture a few years before the actual founding of the society; albeit unknown by him who brought it forth. In 1894, Professor Edward Orton, Jr., who was then twenty-nine, witnessed the realization of his dreams and ambitions when the Ohio State University formally opened courses of instruction in ceramic engineering with Professor Orton as director. This was the world's first collegiate course of instruction in ceramics and it bespeaks the superb organizing ability, the straight mind and systematic thinking for which Professor Orton is justly reputed, that out of the then existing scattered bits of technical ceramic information (most of it was largely in foreign languages) the young man with very limited ceramic experience, could outline so practical a course of instruction.

ELMER GORTON ATTENDS FIRST CERAMIC CLASS

The instruction given was sound but the most valuable training received by those that entered his first class was not found in the things related, but in the systematic attack of problems in the laboratory, and in the clear, clean-cut analysis of the results obtained.

In Professor Orton's first class was a grocery man's son who, on completion of the second year of industrial course, entered in the employment of W. D. Gates. In 1908 this young man, Elmer Gorton, read a paper on terra cotta glazes before the National Brick Manufacturers Association in the Monongahela House, Pittsburgh, Pa., to which but very few listened and fewer still understood. So provoked was the reader that he appealed to Professor Orton for an organization composed of ceramic workers who would and could with profit, consider such technical papers as the boys from the ceramic school were trained to write.

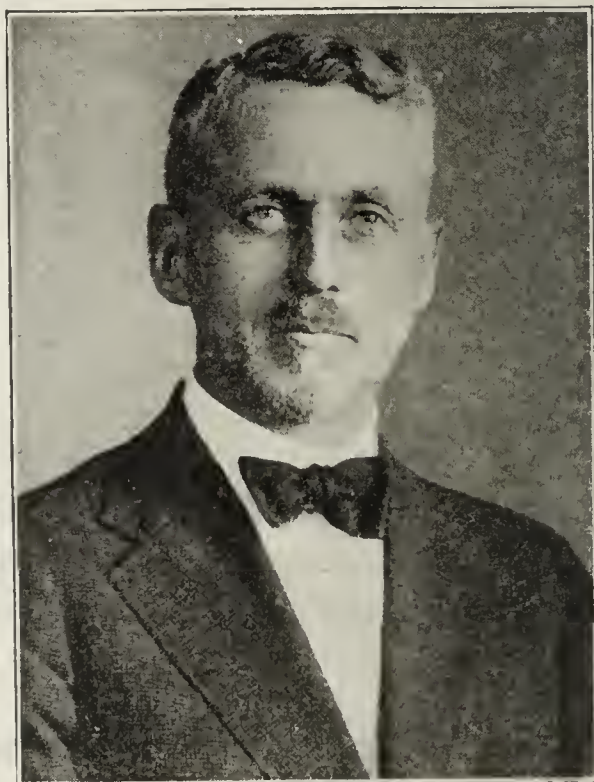
FIRST MEETING IN 1899

It was only natural that the analytical brain, the magnetic personality, and the steadfastness in purpose, that had caused an unwilling Board of Trustees of the University to create a department and professorship in a subject that had never before been recognized as deserving of special collegiate curriculum, could with equal success in the face of the jealously held trade secrets and in fear of disclosure from competitors of processes and compositions, enlist nearly thirty of the leading clay workers to

meet in 1899 in Columbus, Ohio, to organize a Society for the reading and discussion of technical papers in the clay industry.

This however, was accomplished, and from that year to this, the American Ceramic Society has been the instructive leader and the inspiration in the promotion of ceramic arts and science, which is one of the oldest of specialized technical organizations. It has maintained its singleness of purpose—the promotion of ceramic technology.

The object of the American Ceramic Society is to provide for the ceramic workers, the owners and managers and the factory and laboratory employes, a forum,—a lyceum—a medium of exchange of knowledge and experience. Moreover, it provides for a record of facts learned, theories conceived and to bring to the solution of ceramic problems



ROSS C. PURDY

in both plant and laboratory, the discoveries made in science and engineering generally. In these objects the American Ceramic Society so well succeeded as to have prompted the establishment of ceramic divisions in Federal Bureaus and departments for ceramic instructions in several universities. The natural action and reaction of all these research agencies being brought together with the industrial workers in an organization in which they all had a common interest and purpose, was that the ceramic manufacturers have had improved facilities, methods and compositions, and a more

generally possessed knowledge so gradually developed that they have hardly realized that credit for all of this was due primarily to the American Ceramic Society.

A. C. S. GRADUALLY FORMED DIVISIONS

One of the evidences of the success of this centralized promotion of ceramic science and technology is that in due time each group of manufacturers began to realize the value of research and some of them joined in the support of fellowships and of cooperative investigations on subjects that were of particular importance to them. Thus, there was a change from support of general ceramic research to the support of special ceramic research. To meet this situation and yet hold the solidarity in purpose of all ceramic interests, the American Ceramic Society established industrial divisions so that the Society now is an association of several separate groups all with the same general purpose as in former years, but each for the promotion of ceramic science and technology as it applies to the needs of its particular ceramic industry. Thus, the Society has a heavy clay products division interested wholly in the technical problems of brick and tile manufacture. Being a division of the Society, each group benefits from the work of all the groups there being no loss in the unity of purpose which characterized the society in former years.

That the Society may be serving all of the ceramic groups and that each division may develop to its fullest possibilities, the Board of Trustees has employed a permanent executive who is to devote his whole time and energy to the promotion of the research work of these divisions as well as to the support of the special committees, and to assist in building up the local section.

ALL COMPANIES SHOULD BE MEMBERS

There being no other agency in a position or none so organized to serve the ceramic industries in the promotion or research, and as the American Ceramic Society is today even more than in earlier years, the motive and inspiration and the chief contributor to all research agencies, Federal, State, School and Corporation, the ceramic industries should and must give the Society all the financial support necessary to permit it to serve them to the fullest extent of its capacity. It is the duty and obligation of each and every ceramic manufacturing concern to become a corporation member and it should be considered as a privilege as well as a duty for ceramic employers to become associate or active members for it is only with the membership dues that the American Ceramic Society finances its work and its monthly journal.

The appointment of a full time secretary was made only after a very careful investigation and a favorable report made by a special committee appointed for that purpose at the last annual meeting. The approval of the report by the Board of Trustees was followed by an approval of the formal contract.

One of the leaders in the agitation for a full time secretary was Ross C. Purdy, whose experience in the clay industry has been a wide and varied one. Mr. Purdy has served as a university instructor, as an assistant to superintendent on clay plants, and as a director of research over a large number of men for the Norton Co. His vision in things scientific, his practicalness in applications, and his skill as an organizer and director, qualifies Mr. Purdy as the proper man to fill the appointment which he has been honored with.

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Price Cutting Has Little Effect on Building

Price cutting in the building material markets continues with less and less firmness and some commodities, such as brick, are

showing a tendency to react upward. Cutting of prices has had very little effect on the building market and a survey of the first half of the year shows that but forty per cent. of a normal amount of construction has been accomplished.

Building investors are, however, still calling for a reduction in costs before going ahead. It appears therefore that labor is the key to the situation. Looking over the situation the investor finds that material costs have been reduced but no appreciable reduction in the cost of a completed building has been effected. The Dow Service daily building report for July 9 says: "As expressed in the cubic foot cost of a walk-up type of non-fireproof tenement or apartment today the cost may be generally stated to be forty cents, net, as against forty-five cents in 1919 and twenty-eight cents in 1912. For a six story elevator apartment the cost is roughly fifty cents, net, per cubic foot today as against fifty-five cents in 1919 and thirty-two cents in 1912. For a ten story high class elevator apartment the price today will approximate eighty cents, net, as against eighty-two cents in 1919 and thirty-five cents in 1912."

In connection with the situation regarding the existing wage scale the report says the following: "In the absence of action on either side more and more projected building operations are being deferred until wage scales are cut. Unless some action is taken this condition will go from bad to worse. Certainly the turn precipitated by the present building material price cutting policy is not making the situation better. Building material price cutting cannot successfully bear the burden of the entire over-loaded construction cost item."

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Care in Making Paving Brick

A basis of confidence—quality—is the subject of the July bulletin of "Dependable Highways" issued by the National Paving Brick Manufacturers Association. The subject matter refers to the various "return" operations that are a normal part of the procedure in making paving brick.

If the raw material is not correctly ground it is reground after passing over the screens. If the brick are not properly formed they are thrown on the return conveyor and reformed. If they are not well dried they are reground. If the brick are not properly burned they are not offered for the use of the paving market. In addition to this, the manufacturer is continually testing his product before it is offered to the purchaser. There is probably no other paving material over whose preparation there is exercised a similar degree of care and watchfulness to insure a uniform and high-grade quality as in the making of vitrified paving brick.

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Clay Products at Pageant of Progress

The coming Pageant of Progress exhibition in Chicago, which is to be the greatest show of its kind since the Chicago World's Fair, will contain spaces of interest to the clay industry. The Chicago Face Brick Association will have a display of the various samples of face brick produced in the vicinity of the city. The exhibit will contain some of the interesting little miniature houses built of miniature brick, on the same order as those used at the Own Your Home Exposition.

A number of terra cotta companies have joined forces and will have a beautiful display at the exposition and considerable time and effort is being put into it. The display will consist of samples of high grade products.

The exhibits will be a wonderful boost for these clay products as the exhibition is bound to attract visitors from every part of the country.

STANDARDIZATION of BURNING

Some General Information on Burning Together with an Outline for Method of Attack to Increase Burning Efficiency

By J. H. Kruson, Cr. E.

Acme Brick Co., Fort Worth, Tex.

OPERATING CONDITIONS on the clay plant are changing rapidly and most clay workers are now giving more attention to the solution of their burning problems. In this direction, in many cases, lies the determining factor of the existence, stability or non-existence of the plant.

By making a thoro study of the physical and chemical changes which take place in the clay during the burning process,—of the kiln construction and proportions,—of the methods used in firing,—and by the compilation of accurate records, the burning operation costs can be analyzed so as to make possible a reduction in cost. It may also be possible to effect a substantial increase in the amount and quality of first grade ware, and it will often enable one to increase the kiln capacity which is an important factor with plants that are short of kilns.

PHYSICAL AND CHEMICAL CHANGES

The heat treatment of clay ware, which transforms the raw material into a permanent product, may be divided into three periods:

1. Water-smoking.
2. Oxidation or Destruction.
3. Vitrification or Construction.

Water-smoking may be defined as the expulsion of the free mechanical and hygroscopic water contained in the clay. Possible sources of moisture in the kiln atmosphere during the water-smoking period are:

1. Water in clay.
 - A. Mechanical or hygroscopic.
 - B. Chemical.
2. Water from fuel.
 - A. Mechanical.
 - B. Water from hydrocarbons.
3. Moisture in bottom of kiln and brick work.
4. Moisture from the atmosphere.

It is possible to rid a clay of all its mechanical water before setting in the kiln, by drying; but, the ware would be too hot to handle and considerable moisture would be taken up by the ware while it was being transferred and cooling. The amount of chemically combined water found in clays, varies from a trace to about 14 per cent. This water is given up by the clay at different temperatures depending upon the mineral constituents of the clay.

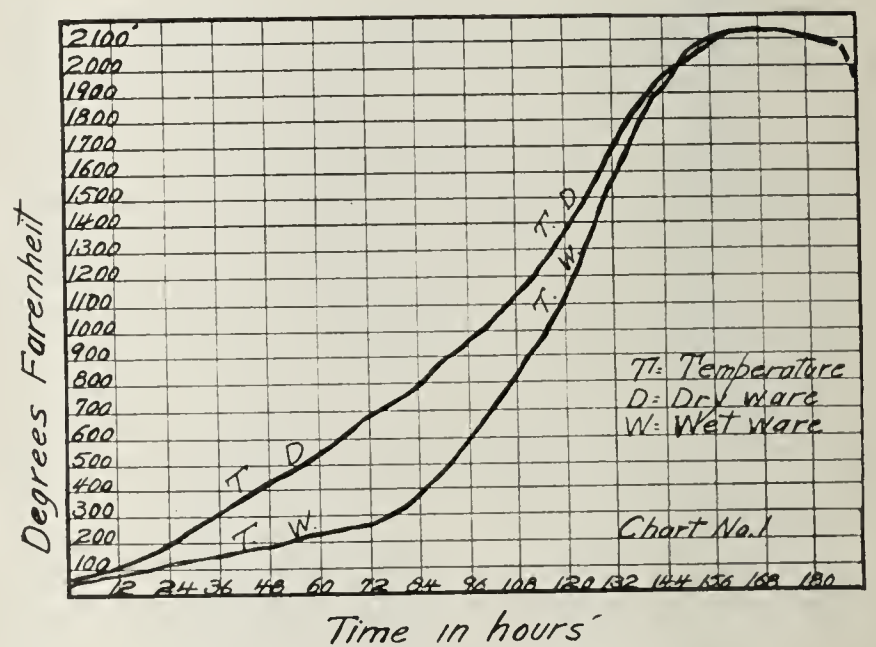
During the period that the chemically combined water is being driven off, there is no danger of softening, scumming, cracking or deformation of the ware, as the temperature is so high that there is no chance for the deposition of the moisture in the kiln. The amount of moisture in fuel varies with the kind and also with the weather conditions. Coke and hard coal contain from 1 to 3 per cent.; soft coal from 3 to 15 per cent.; lignite or brown coal from 14 to 40 per cent.; and wood

from 15 to 30 per cent. Gas and oil contain very little moisture. But, where oil is burned and steam used to atomize the oil, considerable moisture is introduced into the kiln.

WATER SHOULD BE DRIVEN OUT GRADUALLY

The proper draining of kiln bottoms and flues is very essential. Damp floors and flues mean that more moisture must be evaporated and carried away. A damp bottom is a common cause of heavy water losses, as the bottom of the kiln is naturally cooler than the top, and when the moisture from the upper courses of the setting is carried down by the draft to a cold damp bottom, the chances are much greater that the moisture will condense on the ware causing losses.

Generally, the heat is raised much faster in a kiln than in a



Difference in Temperature Between Dry Ware and Half Dry Ware.

dryer. Considerable care must be taken or the water will be driven out so fast that the clay bond will be ruptured. If there is insufficient draft to carry the moisture out from the kiln, the bottom courses carrying an excessive load will become soft from the condensing moisture and kiln-marked ware or swelling and cracking will result.

Only dry ware should be set in kilns since a kiln is too expensive to be used as a dryer. If damp and dry materials are set, there will be a wide variation in temperature between the two. The dry ware will increase in temperature and hence oxidize, while the heat absorbed by the damp ware is being used as latent heat in driving out the moisture and in increasing the temperature of the ware. If the temperature is increased very rapidly, the oxidation period will be very short, or will be

practically eliminated by the long water-smoking necessary to remove the moisture.

Chart No. 1 shows the difference in temperature between dry ware and some of the same ware as set with less than half dry. There was a difference of 438 deg. F. in temperature around the two classes during the burning.

DESTRUCTION OR OXIDATION PERIOD

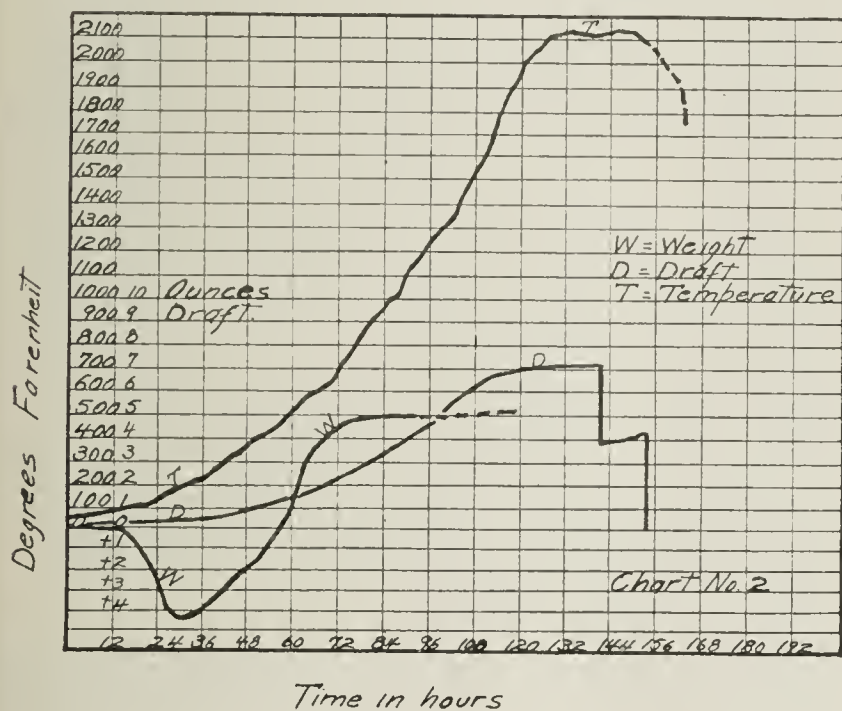
During the oxidation period, chemical changes occur in the clay mass, that is, dehydration of hydrous materials, distillation of volatile matter and oxidation of all combustible material.

The dehydration or expulsion of the chemical water from any clay is an individual matter, depending upon the mineral constituents of the clay. Compounds which break down under heat and expel gases are found in most clays and must be distilled or driven off before vitrification starts. The most common compounds are iron in combination with sulphur generally as sulphide (pyrites) carbonates (of calcium, magnesium and iron), ferric oxide and hydroxide. Calcium and magnesium carbonates are often found associated as dolomites. The time required for these compounds to oxidize and liberate their gases, depends upon the amount present, the physical properties of the clay mass, the rate of increase in temperature, and the draft.

It is seldom that a clay does not contain some member of the carbon family as vegetable matter, woody tissues, peat, lignite, and hard or soft coal.

Generally, the ware is so dense that an abundance of air cannot easily circulate thru it and the danger of reducing conditions in the clay must then be considered. If the volatilized hydrocarbons cannot escape, they will exert such pressure that the ware will be distorted, when the vitrification starts.

A resumé of the periods of chemical changes which should be completed before vitrification begins are: Between 125 and 150 deg. C. calcium sulphate liberates some water of crystaliza-



Effect of Sluggish Draft in Removing Moisture from Kiln of Dry Press Fire Brick.

tion. At about 200 deg. C. the most easily volatilized forms of carbon come off and some hydroxides break down, liberating some of their chemical water.

Between 250 and 550 deg. C. magnesium and ferrous carbonates break down into oxides. Pyrites lose one molecule of sulphur. Bituminous material starts to oxidize.

From 550 to 900 deg. C. hydrosilicates of aluminum give up their chemical water.

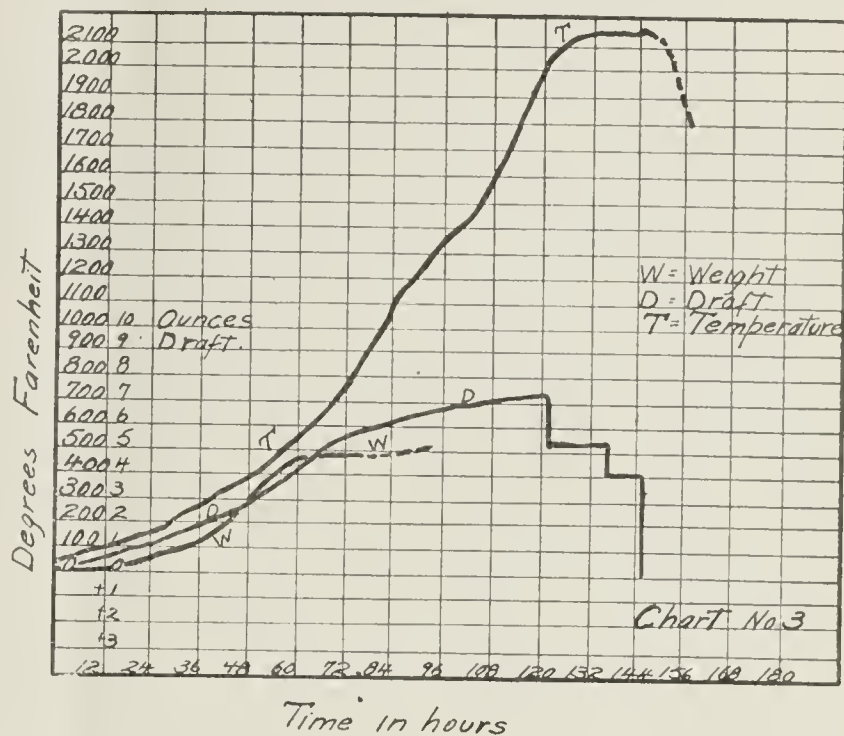
About 600 deg. C. dolomite breaks up, liberating part of its carbon dioxide.

From 700 to 900 deg. C. calcium and magnesium carbonates liberate the last of their carbon dioxide.

About 950 deg. C. the oxidization process should be completed under normal conditions.

VITRIFICATION OR CONSTRUCTIVE PERIOD

During the vitrification period, new mineral compounds are formed. There should be no overlapping of the oxidation and vitrification periods. This period may be divided into four classes —(1) Incipient vitrification, (2) Complete vitrification, (3) Viscous vitrification and (4) Fusion. An example of incipient



By Increasing Draft, Moisture Can Be Carried from Kiln Fast Enough to Prevent Condensation on Brick at Bottom of Kiln.

vitrification would be hard building brick. Also, the majority of fire brick would fall into this class. The coarse material is practically unchanged. The very fine particles have softened sufficiently to cement the mass together and undoubtedly have lost their mineral identity.

Complete vitrification is the stage in which the very largest particles only retain their identity. The larger portion of the material has become homogeneous and glassy. A paving block is a good example. It is practically non-absorbent and mechanical strength is at its maximum.

Viscous vitrification refers to the stage where fusion has advanced so far that nearly all of the mineral constituents have been dissolved. The ware will hold its shape. However, if any additional weight is added it loses its original form.

Fusion is that state in which the ware can no longer support its weight. It slowly loses its shape and is converted into a liquid form.

FIRE CLAY WILL NOT EASILY FUSE

The vitrification temperature and range depends upon the mineral constituents of the clay. For example, a shale with a high content of iron or lime or both, would undoubtedly have a low vitrification temperature and a short vitrification range. Owing to the chemical characteristics, the process of changing the mineral constituents from one form to another will be very rapid with a comparatively small increase in temperature, while the mineral ingredients of a fire clay are such that they will stand a wide variation in temperature covering a considerable length of time without any danger to the ware.

As the temperature at which the first process of solution is reached, the very fine particles are supposed to start fusing independently at a great number of places in the mass. The large particles form a rigid interlocking skeleton or frame work. As the process advances, this skeleton is gradually eaten away, reduced in size and rigidity. The fused areas slowly emerge into each other, dissolving the frame work until it collapses and the mass deforms into complete fusion.

Soon after a kiln of ware is thoroly dry, chemical actions start and continue during the heat treatment, also during the early stages of the cooling period.

Too few burners or superintendents have any knowledge of the chemical changes which take place in their clays, or of the laws which govern them. The water-smoking period is one in which physical changes, not chemical, take place; however, a very limited number understand the proper manipulation of draft and temperature necessary to carry a kiln thru this stage in the shortest time without injury to the ware.

WARE OFTEN BURNED TOO LONG

A great majority of manufacturers are burning their ware much longer than necessary, mostly because they lack information as to how to handle fires and draft, so that the burn will be shortened without harm to their products. Some insist on an eight or ten-day burn, for some pet reason, regardless of what progress others are making with similar conditions.

A long burn may be due to faulty kiln construction, or often a fireman will hold his fires thru fear of a poor kiln. The greatest loss of time is during the water-smoking and oxidizing periods. The continuous kiln has gone a long way in proving that clays, as a whole, can be successfully burned in 120 to 132 hours—the majority in less than 120 hours.

It does not necessarily require the services of an experienced ceramist to carry to completion some practical experiments, which are described further on. However, if the services of a technical man are available (one who has had considerable actual experience with burning) he can carry on the work more quickly, work out standard schedules for draft and temperature treatments, which will be more productive of results than those made by a non-technical worker.

SYSTEM SHOULD BE WORKED OUT

The continuous, semi-continuous and producer gas fired kilns, as well as a few heat saving and forced draft systems, adaptable to periodic kilns, have proven their value in saving fuel, labor and time; also, increasing the quality of ware manufactured. The initial cost of the continuous type is heavy. Some have found that a considerable saving can be effected by applying some system to their periodic kilns. The majority of manufacturers are using the old periodic type and cannot afford to discard them until they become uneconomical thru use.

As the burning involves physical changes during the water-smoking, chemical changes during the oxidation and vitrification, and as these are governed by draft, time and temperature, a kiln should be adopted as a standard, so constructed that the fuel consumption, labor and radiation are at a minimum and the draft and temperature in all portions of the kiln can be easily controlled by the burner. In each plant there is one best kiln, which produces the largest amount of number one ware with the least fuel, labor and burning time. Therefore, the principal aim should be to make all kilns conform as nearly as possible to this one kiln.

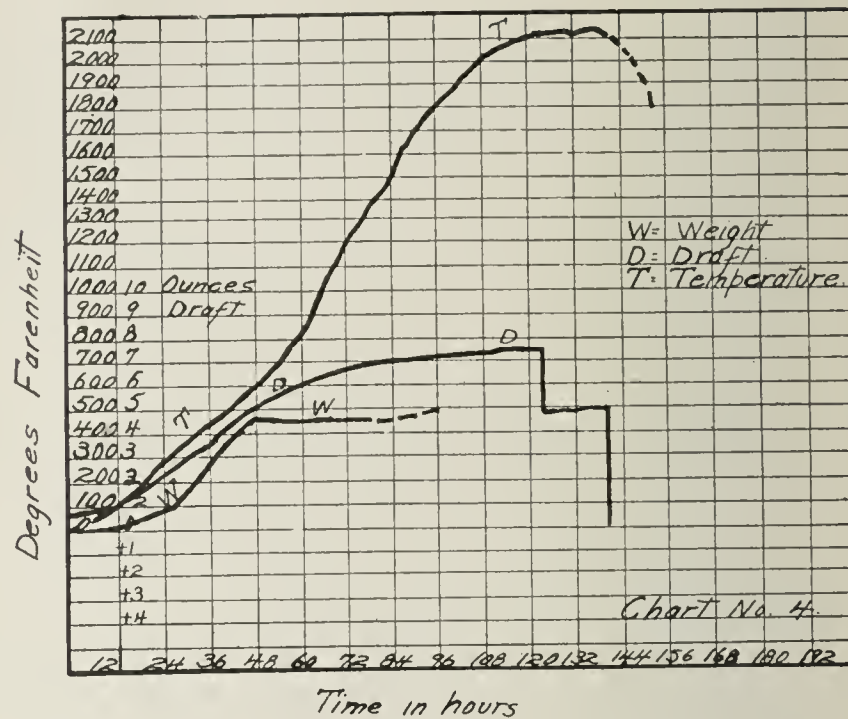
Until quite recently, very little attention has been given to kiln construction. On practically every plant using periodic kilns, there are no two which have the same numerical proportions. Perhaps they were originally constructed from the same drawings or without any. Often the mason in charge proceeded as he thought best or followed the suggestions of the head burner, foreman or superintendent. Repairs have been necessary, and each kiln carries some one's idea of a perfect flue bottom or fire hole. The result is obvious—no two kilns burn alike, fuel consumption and burning time vary; also, the labor requirements and percentage of first quality ware.

SIZE OF FLUES AND GRATE AREA IMPORTANT

To burn a kiln efficiently, the grate area must be large enough to raise the heat as fast as possible (without injury to the ware)

to the finishing temperature. Flues must be of sufficient size to carry away the moisture and products of combustion and so arranged that hot and cold spots can be easily controlled by the burner. The flow and distribution of the fuel gases depend upon the construction of a kiln. However, there is an allowable variation in dimensions without causing any serious effect upon the results.

In order that the numerical proportions of the most important heat passages may be compared, a thoro analysis of each kiln is



A Strong Draft from the Start of the Burn Dried Brick in Forty-Eight Hours at Temperature of 600 Deg. F.

necessary. It is essential that all heat passages be accurately measured at the smallest cross section area. For example, a large flue leading to a stack opening of half its size will carry practically no more volume of gases than will pass thru the constricted area. The following data should be obtained and systematically arranged so that the different areas and their proportion to the floor area may be easily compared. Other dimensions may be added if a more detailed analysis is needed.

Furnaces—Width and length of furnaces, height from top of arch to grate bars (if flat), and to ash pit. Grate area or fuel area. Opening from furnace into the kiln.

Kiln Interior—Area of floor. Height from floor to top of crown and to the spring line.

Floor—Number, size and area of floor openings.

Bottom—Type of bottom. Size, number and area of secondary flues leading to the main flue or flues. Size, number and area of main flue or flues leading to the stack flue.

Stack Flue—Size, length and area of stack flue.

Stack—Size, height and area.

The holding capacity of a kiln is governed by its floor area. (Seldom by its height). The grate area and all flue areas of a small kiln should have approximately the same numerical proportion to its floor area as the grate and flue area of a large kiln has to its floor area, if the conditions are equal.

Taking the floor area as a unit or basis for comparing the areas of the passages which carry the products of combustion into the kiln and out into the atmosphere, the following information is necessary.

- Square feet of grate area per 100 Sq. Ft. of Floor Area.
- Square feet of throat area per 100 Sq. Ft. of Floor Area.
- Square feet of floor opening per 100 Sq. Ft. of Floor Area.
- Square feet of secondary flues per 100 Sq. Ft. of Floor Area.
- Square feet of primary flues per 100 Sq. Ft. of Floor Area.
- Square feet of flue to stack per 100 Sq. Ft. of Floor Area.

G. Square feet of stack area per 100 Sq. Ft. of Floor Area. A careful study of the analysis will show where remodeling is needed, when repairs are necessary or before.

WATER-SMOKING IS DIFFICULT PERIOD

The draft gauge is an inexpensive and simple instrument, altho there are few in daily use. The variations in draft are mostly due to the wind, temperature and amount of moisture in the clay and atmosphere.

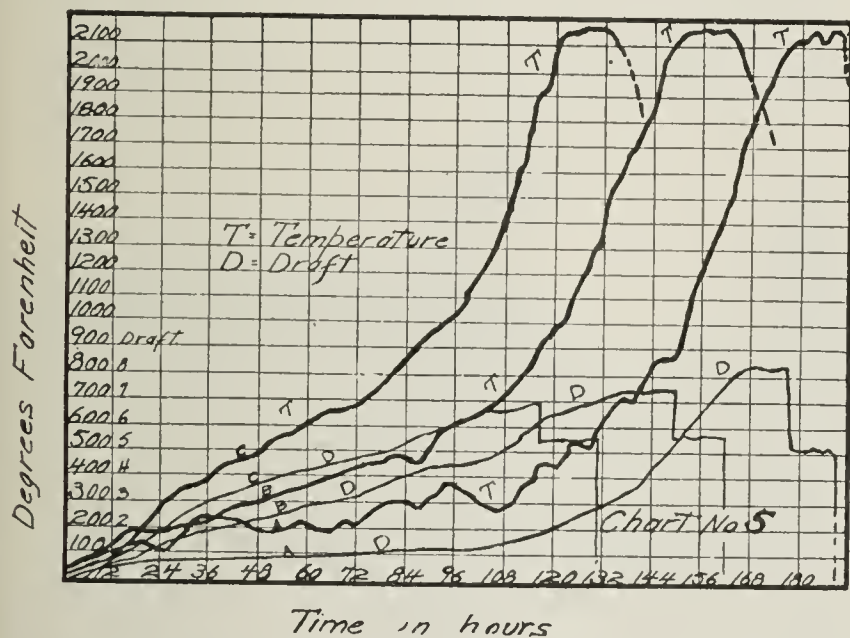
The water-smoking is one of the delicate operations thru which the ware passes during the burning process; especially, is this true of dry press brick and large ware. The well known destructive results of a poor water-smoke, and the large cumulative losses for a year can be overcome, if the burner has a thoro knowledge of the conditions in the kiln. The removal of the moisture from the ware and kiln depends as much on the circulation or draft as upon the temperature.

A few experiments on each kiln, as follows, will determine the draft and the temperature which will safely carry the ware thru this period in the shortest time possible.

Weigh about fifty perfect brick. Mark and set them in the kiln about 7 feet from the wicket, two courses (on edge) off from the bottom. The setting should be so arranged that they can easily be drawn. A brick should be drawn every four to six hours, accurately weighed and any loss or gain in weight in ounces or fraction of an ounce be plotted similar to chart No. 2 with the corresponding draft and temperature. If pyrometers are not used, a thermometer which registers up to 450 or 500 deg. F. will answer the purpose.

POOR DRAFT CAUSES IMPERFECT RESULTS

Chart No. 2 shows the effect of a sluggish draft in removing the moisture from a kiln of dry press fire brick. The tem-



In the Burn Represented by This Chart, the Use of Pyrometers, a Draft Gauge, Flue Gas Analyzer and Burning Records Effectuated a Big Saving in Time and Fuel.

perature was increased so rapidly that the moisture was driven from the ware faster than it was carried from the kiln, by a low draft. This resulted in poor brick in the bottom. Trials were drawn at three hour intervals. Following the line marked "W" which represents the increase or decrease in weight, we find that the bottom brick increased in weight for the first 30 hours of the burn. The water-smoking was completed in 72 hours and at a temperature of 700 deg. F.

Chart No. 3 shows that, by increasing the draft, the moisture was carried from the kiln fast enough to keep it from condensing on the brick in the bottom of the kiln. The ware was free from moisture in sixty hours and at a temperature of 560 deg. F.

Chart No. 4 shows that with a strong draft from the start,

the moisture was carried out of the kiln and the ware was dry in forty-eight hours at a temperature of 600 deg. F.

The placing and mudding of tops or covers over the center hole and side ventilation holes, has a decided effect on the water-smoking.

INSTRUMENTS HELP DETERMINE PROPER PROCEDURE

During the destructive or oxidizing period, the volume of air admitted to the kiln depends upon the amount of material in the clay, which must be removed or oxidized. If an excess of air is admitted, it carries the heat from the kiln before it is absorbed by the ware. If the draft or volume of air is not sufficient to supply the necessary amount of oxygen needed for combustion and oxidation, the ware enters the vitrification period before being completely oxidized and as the outside of the clay fuses, it shuts off all sources of air from the inner and unoxidized portions. During the vitrification, when the draft is checked by the damper in order to drive the heat to the bottom of the kilns and a reducing or oxidizing atmosphere is necessary, the draft gauge is essential for continuous economical operation. The Orsat apparatus or gas analyses is of great value in regulating the amount of air necessary for efficient combustion.

The value of a pyrometer system depends wholly upon the use of the records which it produces. Many installations thru-out the country have failed thru lack of competent care or inefficient use of their records, consequently, many do not consider an installation of any value.

CHEMICAL CHANGES START AFTER WATER-SMOKING

After water-smoking, chemical changes start, their speed depending upon the rate of temperature increase and upon the constituents of the clay. By continuing to draw trials every four to six hours and observing the effect of certain temperature increases and draft upon the ware, the temperature increment and draft necessary for the shortest burning time, can be determined. After carefully compiling this data for three to six burns, a standard can be secured and if correctly made, it represents the actual time necessary to burn the ware successfully.

A pyrometer system is an essential factor in standardization and economical burning. It would be a rather difficult task to establish or live up to standards without some quick and accurate means of measuring and recording the kiln temperatures.

The longer a kiln is burned, the more fuel there is consumed, the more labor there is required and the greater the time of kiln turnover.

A fall in temperature is not only injurious to shale paving block, sewer pipe and other vitreous wares, after reaching a red heat, but is costly, inasmuch as time, fuel and labor are wasted.

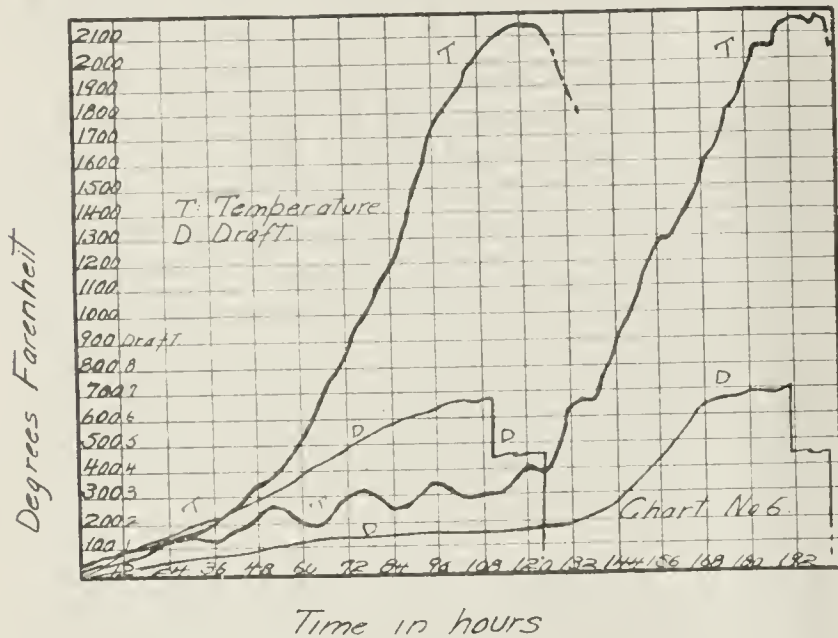
RECORDS VALUABLE FOR FUTURE BURNS

The burner should prepare a daily schedule, covering the heat treatment of each kiln for the next twenty-four hours. A standard record sheet should be used, on which the fireman or burner records the temperature, draft and other information of value every two or three hours. These record sheets are of value for future reference. Also, these should be adequate and permanent records of the conditions existing in the kiln during the finishing stage and the position of light, overburned, cracked, crooked, or other defective ware in the kiln, with any other results which will help the burner in securing any better results in the future.

Chart No. 5 shows the progress made by using pyrometers, the draft gauge, the flue gas analyser and records in burning brick. A reduction of 58 hours in burning time, a saving of .11 tons of coal per ton of brick and an increase in the plant output over 18 per cent. was accomplished. Also, the quality of the ware was materially increased.

Chart No. 1 shows a very long water-smoking period with wide variations in the temperature up to 600 deg. F., a steady increase from 600 to 2,100 and fluctuations in temperature during the vitrification. Chart No. 2 shows a steady increase from the start to the finish of the burn.

Chart No. 6 shows the results of applying these methods to the burning of sewer pipe, a reduction of seventy-four hours in



Results of Applying Scientific Methods to Burning Are Shown Here. The Amount of Time and Fuel Saved Was Tremendous.

burning time, a saving of .18 ton of coal per ton of ware—and with an accompanying saving in labor and increased kiln capacity over 20 per cent. was made possible.

Similar results can be accomplished on the majority of plants by a thoro analysis of conditions and applying scientific methods of procedure.

Rolled Bases for Brick Pavements Successful

The official organ of the National Slag Association for June 1921 has devoted the largest part of the issue to a discussion of slag bases for brick roads. The article says: "The rolled slag base is a coming thing in brick road construction, according to the view of the paving brick industry." The article then quotes Maurice B. Greenough, secretary of the National Paving Brick Manufacturers as follows:

"Of course it is also an old thing, but it is a coming thing in the sense that there has been, within the last few seasons, a better appreciation of the merits of the rolled base; better ideas about its construction and a proportionately greater use of this type of base."

After a study of 187 miles of Ohio brick pavement upon rolled bases, secretary Greenough made a report to the Federal Bureau of Public Roads in which he says: "After a tabulation of the years in which the various stretches of rolled base roads were built, attention is called specifically to the fact that 177.44 miles have been built in the last six years, during which time Ohio, in common with the country generally, has experienced tremendous highway traffic in amount as well as weight and speed."

"The conclusion is justified that Ohio regards the brick pavement on the rolled base as pre-eminently suitable for its heavy traffic requirements."

The rolled base type of brick pavement is coming more and more to supplant the rigid foundation or monolithic type of pavement where the brick were bedded in green concrete and grouted with cement filler.

New Edition of C. B. M. A. Book

Third edition of "Brick—How to Build and Estimate," one of the several publications being produced by the Common Brick Manufacturers' Association of America, is about ready for distribution. The book contains seventy-two pages in this edition, making it one and one-half times as large as the previous issue. The entire book has been rewritten and data compiled by W. C. Carver, architect and assistant to Ralph P. Stoddard, secretary-manager of the association.

Sand-Lime Brick Extremely Popular in Dayton

A four page folder has recently been put out by the Crume Brick Co., Dayton, Ohio, showing some of the qualities and extensive use of its sand-lime brick in that city. The folder contains a picture of the business section of Dayton on which many of the larger buildings constructed of sand-lime brick are marked. The pamphlet says: "Nearly every large building shown in the photo constructed during the past ten years is faced on two or more sides—in addition to their use as common brick—with Crume Brick Company's Sand-Lime Brick."

It is startling to think that sand-lime brick has been able to gain such headway in the state which is a veritable stronghold of clay products.

On the back of the pamphlet is a testimonial of the fire-resisting qualities of the brick. A picture is shown of the Manufacturers Production Co. plant completely burned out with only the walls intact. The plant was rebuilt and the original walls used. Later the plant burned again and the brick also survived this fire and were used in rebuilding the plant the second time.

As a clever piece of advertising the folder can not help but elicit admiration.

A Correction

Those who read the news column of the July 12 issue, must have been astonished at the enormous capacity of the Colburn Brick & Tile Co., Zumbrota, Minn., which was accredited with an output of 600,000 cars a year. This was, of course, very much in error and should have read 3,500 cars.

Set Date for American Building Exposition

Dates for the American Building Exposition, to be held at Cleveland, Ohio, have been tentatively set at January 11 to 21. It is the belief of the executive committee and manager "Dick" Collier, that if these dates can be adhered to, that is, if the public hall will be completed in time to use the building at that time, the best results for the building industry for 1922 will be obtained.

"This is about the right time to hold such an exposition," says manager Collier. "It is not too early in the winter to cause interest in new home building to wane before the spring arrives. It is not too late to give the prospective builder time to go over his plans, make alterations and improvements, or other decisions, and all such revisions can be completed before the actual spring building season arrives."

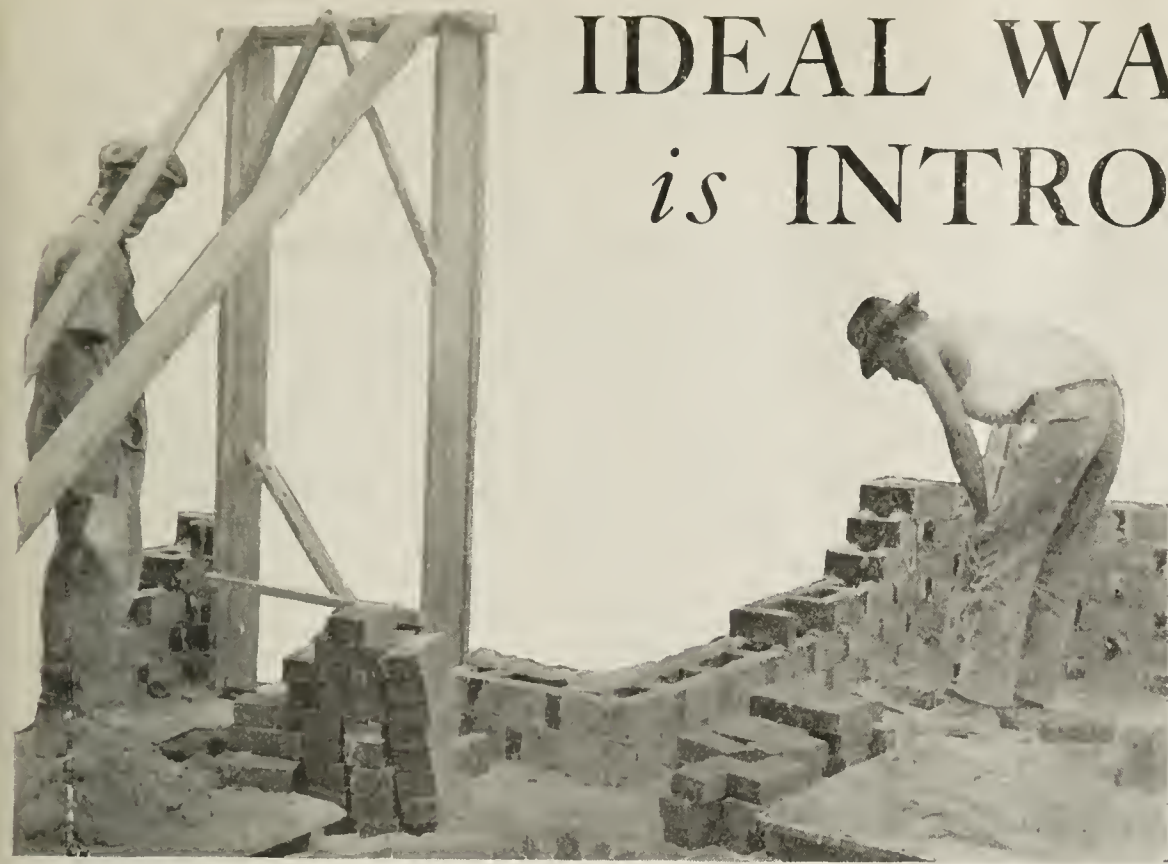
It is such information as this, as well as other details pertaining to the building show, that is being sent out now from Exposition Headquarters, Scofield Building, in literature to prospective exhibitors. The advisory committee of thirty representative business men, in and out of Cleveland, will be named in a few weeks.

IDEAL WALL HOUSE

is INTRODUCED *to*

CHICAGO DISTRICT

Now Building Two Homes in Winnetka of Brick Hollow Wall



THE IDEAL WALL has been introduced in the Chicago territory. Winnetka—a beautiful North Shore Suburb lying on Lake Michigan, eighteen miles north of the “Loop,” Chicago—is now building two homes in which the ideal wall form of construction is being used.

One of the structures is a story and basement bungalow, being built by J. P. Lenard, and located on Willow St. The bungalow is a six room house of ordinary design, L. J. Allison being the architect. E. L. Archibald, a builder of industrial structures, is contractor. This concern, while it ordinarily constructs only the larger type of factory buildings, has interested itself in the hollow wall and is aiding in the introduction of this type of construction in the Chicago district.

The house is being con-

structed forty-five feet long by twenty-six feet wide with a foundation of solid brick up to the ground line, and the remainder of the wall an eight inch brick hollow wall, the form of construction that is generally known as the Ideal wall.

“Oxblood” face brick furnished by the Kimball Wheeler Brick Co. are used for the headers and stretchers on the exterior wall. Common brick—Chicago commons—furnished by the Illinois Brick Co. are used for backing up and the interior part of the wall.

In discussing the building, the contractor stated that considerable money is saved in material but due to the inexperience of bricklayers in laying up this kind of wall the saving in time is but very little. However, the contractor feels certain that with a little experience the bricklayers will be able to affect

a considerable saving in time in the laying of the brick for ideal wall construction.

The contractor estimates that the difference in



At Work on the First Building in the Chicago District Where the Ideal Wall System of Construction Was Used. The Exterior Headers and Stretchers Are Face Brick, the Interior Brick Are Commons.

cost between this dwelling built with ideal wall construction and that of a similar home built of frame, is about \$300. This difference he states would soon be wiped out by depreciation and maintenance of the frame house. The cost of the home has been estimated at \$8,500.

The other house being constructed in Winnetka, is a two story with garage attached. This house is being built of plain Chicago commons in common mortar. Fugard and Knapp are the architects of this house, which is located on Forest Ave.



Making Soap From Colloidal Clays

A new use for clay has been found by the California Master Products Corporation, in the manufacture into soap of the prod-

uct known as colloidal clay. A 100-foot shaft in a rich vein of soap clay about 140 miles from Los Angeles has uncovered the valuable discovery. A fine grade of soap which the company has made from this clay is now being tested in laundries.



Fight for Freight Rate Reductions Continues

The fight for a reduction of rates on road building materials which include paving brick is going on according to A. P. Sandless, secretary of the National Crushed Stone Association. In a letter received from Eugene Morris, chairman of the Central Freight Association it was stated that action has been taken to recommend a conference between shippers and carriers with W. V. Hardie, director of traffic of the Interstate Commerce Commission to jointly consider the matter.



TREND of BRICK PRICES *in* NEW YORK *is* UPWARD —OTHER BUILDING MATERIALS RECEDE

MIXED FEELING of hesitation and confidence combine at present to make the eastern construction situation spotty, says the Dow Service daily building report of July 16, 1921.

Building investors are being made hesitant by pending price readjustments downward in some basic building commodities and the possibility of the present wage conferences culminating this autumn in more aggressive tactics.

Confidence, on the other hand, is responsible among a different type of building investor in proceeding with building projects, notably, huge building construction enterprises or modest alteration work. The speculative builder of the type that would soonest reduce to less harmful influence the housing shortage if he could have a free and favorable market, is finishing up the work he has on hand as rapidly as possible and is inclined to await further developments before proceeding with other enterprises.

PRICES MANIPULATED DOWNWARD

Building material prices are under manipulation downward to all intents and purposes, especially as they appeal to prospective builders, identically as they were being manipulated upward about this time last year. The reaction upon the building public is also about the same, namely, to check building enterprise of a general character.

Yet there is an increasing number of building projects being recorded and some building construction jobs that have been abandoned for a year or more, awaiting final pit levels of material and equipment prices, are being re-figured and are being awarded. The gain in building material movement that has been showing an ascending movement since March is apparently settling down to a plateau level, neither gaining very much nor losing very much.

COMPETITION INCREASES

Price cuts in all departments that are being announced are, in nearly all instances, due to a willingness upon either the manufacturer's or distributor's part to sacrifice already meagre margins in order to keep their organizations together.

Competition is keener than it has been in this market for almost a decade. Many firms doing building construction work that never before have had to seek business in competition are aggressively meeting rival prices and delivery promises. The situation for some building interests is developing into novel lines.

Some close buyers are even able, they say, to obtain from

purveyors of building materials and manufacturers protection on their contracts against further decline running as long as one year from date of contract. Manufacturers in making this sort of concession do not appear so reluctant in this regard as they are to protecting themselves against a price advance between the present and this time next year.

BRICK PRICES RISING

Brick is a fairly safe barometer of this phase of the building market. The price movement in this basic commodity has been generally upward for nearly a month. Prices to the ordinary quantity buyer have advanced a dollar, from \$14 to \$15 in the wholesale market. Some brick of the finest selection, has actually been sold here for \$16, altho the run of the open market for this material is \$15 a thousand, to which must be added, for delivery price, cost of handling, haulage and ten per cent.

The cause of this stiffening process is low volume of production, that is, no great piling up of reserve, in the absence of general confidence in the eastern building market.

This is identical with the policy of building material production in general. Manufacturers are not to be expected, in these days of doubt and distraction, to display confidence in a building market in which the building investors themselves have no confidence.

EXPECT PRICE CHANGE UPWARD

Until all factors making up the item of construction cost uniformly contribute to general reduction of financial outlay involved in building protection, investors need expect no large reserve volume of building material to be laid up. Until that time both dealer and distributor will continue to supply the builders' needs on a brokerage basis and the manufacturer will gauge his production by actual current contract demand. The least increase in demand will produce a change upward in prices, according to that program.

In the case of brick production, as an illustration, a month of poor brick manufacturing weather has cut down production and reserve stocks. Reserves are going out faster than brick can be produced. The shipment of cement is so rapid as to keep reserves low, and mill centers say the country is buying lumber mainly for western consumption, about as fast as it is being cut. Steel prices are being cut at the actual sacrifice of what even in a normal time would be apparently proof against that sort of stimulation.

TRIMMING *the* SLICKERS

First Part of a Practical Story Teaching a Valuable Lesson in the Necessity of Keeping Abreast of the Times—Written to Make it Enjoyable Reading

By Arthur G. Ruppert

THESIS: In Swifton, a small New England town, is located a soft-mud brick plant of 25,000 daily capacity, which has been in operation for 40 years. For thirty years it has been owned and managed by two "old-timers" who are so intrenched in the dreams of yesteryears that any innovation whatsoever from the standards of the past, even in brick-making, seems to them but new evidence of a collapsing civilization. They have never caught up with the law of change and in twenty-five years have not added an improvement until an expensive breakdown or sure-fire salesman forced the issue upon them.

At the opening of the story, they market, in competition with four other local plants, in a large city some fifteen miles distant. Three plants are located on or near a railroad and ship into this city by rail. One plant ships by motor trucks. The plant in the story ships by wagons.

It is Spring in 1921; the period of doubt in the manufacturing and business world. The textile mills in the large cities immediately surrounding Swifton are shut down; building activity has almost ceased. The market afforded by other large cities, in which the wheels of industry still sing and building goes on apace, is closed to the Swifton plants because of high production costs and high freight rates.

Consequently, the five plants are struggling for existence. The best of them is not making money. The little surplus garnered by the three fairly prosperous years preceding is now being drawn upon heavily to meet the current deficits. In a mad bid for local business, senseless price-cutting has robbed even the active plants of legitimate profits. It is only a matter of time until at least two of the plants must fail.

At the opening of the story, the old partners in the wagon-shipping plant have decided to "unload." In their opinion, the bottom has dropped out of the brick industry for good. They pooh-pooh the idea of installing modern equipment, lowering production costs, and meeting the lowest market figure with profit. In their opinion, it can't be done. Why sink their personal savings in a sure loser and "go over the hills" for the remainder of their days? They have advertised the plant for sale in *Brick and Clay Record* and are now dickering with three young Westerners over the purchase price.

Dramatis personae: The old partners are Lemuel Ashby and Joshua Mapleton; both are in the early 60's, yet as sturdy and substantial as ancient hard-burned brick. Joshua, however, has faulty hearing, and, while his association with Lemuel has been so intimate that he can read every word Lemuel's lips express, he is quite at sea in the presence of strangers, and, in his sincere efforts to catch every word, has a habit of bobbing around, here, there, everywhere, with his right hand cupped to his ear, like a windswept fisherman's cork in restless waters.

The younger men—the new owners—are Dick Hill, Jack Quincy, and Albert Brown; typical aggressive, quick-thinking, go-getter young Americans. Hill is the brains of the party. He obtained his Cr. E. degree at Ohio State University, and has just lately resigned as assistant superintendent of a progressive western brick plant. His partners furnish the cash and keep largely in the background.

Other characters: Jerry, himself; a springhalted bay gelding, a trifle swaybacked in his decrepitude, but who has not failed his masters one working day in the last quarter-century. (2) Mose, an old darky, and man-of-all-work for Lemuel and Joshua. (3) Slim Hardscrabble, Lemuel's and Joshua's most successful competitor.

Scene 1

One of the few beautiful days of early March. The country-side is aglow with sunlight and the first vestige of budding things. Now and then the silence is broken by the plaintive mate-call of robins. Looking eastward on the macadam road, which, under the 10-o'clock rays of the morning sun, has begun to sweat off the accumulated moisture of Winter's snows and storms, may be seen the slow-going, springhalted Jerry, with Lemuel and Joshua in deep consultation in the creaking open-buggy. Joshua is seated at Lemuel's left side with his right hand perpetually cupped to his ear.

Joshua (*earnestly*): "By cracky, Lem, we gotta be sharp, er them slick chaps 'll do us."

Lemuel (*with a wink*): "T ain't likely, Josh. Recollect the old plant ain't what she used t' be."

Joshua (*shaking his head*): "Nothin' ain't like it used t' be, Lem; but we don't plan to be humswoggled *always*, do we?"

Lemuel (*sarcastically*): "If we did, we'd keep on making brick."

Joshua (*who invariably approves Lem's wit*): "Ha! Pretty clever, Lem. Outside of twelve handsome pieces of hossflesh, the old plant ain't much."

Lemuel (*excitedly*): "Gollybob, Josh! Don't stress hossflesh to them young chaps. A hoss ain't worth nothin' nowdays. You could buy two hosses like Jerry here was in his prime fer the price of one big ottymobeel tire. Hossflesh has plumb gone to the dogs!"

Joshua (*indignantly*): "Nothin' ain't like it used t' be, Lem; an' Jerry was *some* hoss twenty year ago, eh?"

Lemuel (*sprightly waves old whip butt in air*): "Go 'long, Jerry; show 'em yer tail!" (Jerry makes a surprisingly brave attempt to cover ground.) "The old boy ain't dead yet. Look at 'im spruce up, would you!"

Joshua (*sadly*): "Sometimes I thinks on how old he's gettin', but he don't show no signs of passin' off."

Lem (*sophistiatedly*): "Don't worry 'bout Jerry. He's swallowed so much brick dust in his time that I bet his inner mechanism is all walled up like China used t' be! He couldn't die if he wanted to—he's *preserved*! Ha! Ha!" (Gives Jerry more rein.) "Go 'long Jerry, er them city gallants 'll beat us to the job."

Joshua (*grinning*): "Lem, you sure do wield a wicked tongue! I don't reckon there's much chance of them birds flyin', do you? 'Member how we passed 'em yestidy? Two of 'em under the greasy belly of that tin-lizzie, an' t' other one puttin' on a new tire! Ha! If that's what they calls a pleasure car, I ain't got no sense of humor. Gimme a nice little runnybout, an' a hoss like Jerry was twenty year ago."

Lem (*nudging Joshua in the ribs with his elbow*): "An' a gal like Susie Snow or Kittie O'Leary, eh? An' a extra nip of hard cider under your belt? An' a moonlight night? An' a heap of courage—?"

Joshua (*takes cupped hand down from ear and smacks Lemuel vigorously on knee*): "Hush, Lem! Them kind of recollections always makes me feel ticklish. 'T ain't no use talkin', Lem, these young dudes 'll never see the things we saw, eh?"

Lemuel (*reminiscently*): "Glad they can't Josh; let 'em find their own sweets. Ha!"

Joshua (*uproariously*): "Never thought of that, Lem; finders keepers, eh? Ha! Ha!"

Scene 2

Exterior of plant. Lemuel and Joshua dismount from rig while the charcoal-complexioned Mose comes out of the office to take charge of Jerry. Simultaneously, from an opposite direction, Messrs. Hill, Quincy and Brown are sighted coming down the road, this time in a powerful racing car, breaking all county speed ordinances and apparently enjoying the risk. With jamming on of brakes and a hazardous skidding of rear wheels, Hill, who is driving brings the big car to a stop only a few feet away from old Jerry, who is pawing and snorting in terror. Instantly, the trio are out of the car, cordially shaking hands all around. Quincy, obviously the chief source of finance among the young men, steps aside from the group to give the plant another once-over. His attitude toward the proposed transaction is anything but enthusiastic.

Quincy (*walking over to Lemuel*): "Did you fellows get your start in the lumber business?"

Joshua (*hopping around with one hand cupped to ear*): "Ha! ha! Never thunders here in March, young man; that noise comes from brick tumblin' into the wagons."

Quincy: "Whoinell said anything about thunder?"

Lemuel (*apologetically*): "You'll have to excuse Josh; his hearin' 's dull, but he's got a keen imagination. Ha!" (*Answers query*): "Nope! Josh an' me specialized in brick all our lives."

Quincy (*sharply*): "That's funny! There's not a brick or tile building on the place, except the kilns." (*Turns to Hill*). "I like the feel of my money better than the looks of this joint, old top! When I start in the lumber business I want a forest, not a brick yard!"

Joshua (*who by much hopping and great stress has followed the conversation*): "Well, y' see, it's like this: When Lem an' me buys th' plant nigh thirty years ago, th' buildings was all spick and span, an we ain't had real call to build a new one since." (*Raises his voice to convincing pitch*). "An I wants to add that Lem an' me been buildin' brick all our lives, an' we ain't been able t' see no great economy in brick buildings fer brickyards."

Quincy (*abruptly*): "You're about to see it now; I'm *buying!* You're selling!"

Joshua (*who lowered his cupped hand a moment to augment his argument with gestures*): "Was I yellin'? Excuse me: Sometimes us deaf fellers talks loud an' don't know it."

Quincy (*impetuously to Hill*): "Is this a business deal or a vaudeville act? That fellow will never hear my price; if he did, he'd die in spasms. Damfisee how you'll ever convert this lumber advertisement into a brick plant, anyway!"

At that moment six wagons, with traces and doubletrees squeaking and bodies groaning, each under its 6-ton load of brick, hove around the corner on their way to the big town. Behind two wagons, an extra horse was in tether.

Quincy (*explosively*): "Hurrah! A caravan of antiquity. Now, if Buffalo Bill and two or three guides would appear, each bound 'round with ammunition belts and rifles cocked for action, I'd think maybe Sitting Bull was on the war path—and begin to feel for my scalp! Say, Hill do we have to *buy*—pay honest-to-God money for that stuff?"

Hill (*diplomatically*): "Well, Quincy, I can't *urge* you to

to take a chance, unless these gentlemen talk price. Frankly, the whole plant is more of a souvenir than an efficient clayware producer. We'll pass it up, if you say the word." (*Starts slowly towards car in which they came. Quincy and Brown move to follow.*)

Lemuel (*who knows all the tricks of horse-trading*): "Nice machine, boys. What became of the noise factory you rode over in yestidy?"

Hill (*jovially*): "Oh, Lizzie's in the garage, getting a new black dress, rubber shoes for summer wear, and internal treatment."

Lemuel (*slyly*): "Kinder thought yestidy she needed a pill er two. Her coughin' was terrible bad! Just a little cold an' indigestion, I reckon, from too many nights out! Ha!"

Hill (*who appreciates Lemuel's wit*): "Probably. You see she's a grand old pal, and we always take her out on state occasions—funerals, coon-hunts, cock-fights, or homebrew parties! Leading that kind of life, she's certain to suffer a little indisposition now and then."

Joshua (*who has been hopping around trying to catch the trend of conversation, now slaps Hill vigorously on the back*): "By cracky, young feller, I knows where you c'n ketch 'em up Dandelion Creek a foot long!"

Hill (*startled*): "What in the devil are you talking about?"

Joshua (*a little confused*): "Didn't y' say you was a goin' fishin' at half-past ten?"

Quincy and Brown collapse upon the running board of the big car holding their sides. Hill manages to retain his composure with difficulty.

Lemuel (*seeing an opportunity to reopen the sale proposition*): "I calculate we'd all better be getting down to brass tacks, if you lads be here to talk candy."

Hill (*motioning to his associates*): "Come along everybody."

Scene 3

Interior of office. It is in keeping with the external appearance of the plant. There are rows of dusty books, several useless desks and chairs, and samples of brick and other clayware stacked up in each corner of the room, on shelves, and used as paper weights on the desks. No stenographer. It is evident that Lemuel and Joshua are their own accountants, office managers, secretaries, and do everything but sweep, which job Mose performs each Saturday afternoon. Quincy and Brown look over the room with obvious displeasure the whole proposition is a burlesque to them. Hill gets down to business.

Hill (*alertly*): "Now, let's talk fast! How much?"

Lemuel (*with surprising alacrity*): "Thirty thousand, cash down!"

Quincy (*in far corner of room, picks up bat and draws back arm*): "Look out, Brown! These old birds are stick-up men!"

Hill (*smiling diplomatically*): "That's probably a low figure for your reputation, Mr. Ashby, but we only want to buy the plant."

Joshua (*jokingly*): "Mebbe we could knock off a little if they'd let us keep Jerry."

Quincy: "Who's Jerry?"

Hill (*with a subtle wink at Quincy and speaking loud enough for Joshua to hear*): "Jerry's that fine-blooded hoss parked out in front."

Quincy (*with mock appreciation*): "Great hoss! Ought to be worth ten thousand! That leaves twenty for the plant!" (*Addresses Lemuel*): "Take it or leave it."

Hill (*before Lemuel can formulate a reply*): "Fact is, Mr. Ashby, you haven't a thing we want, except that bank of clay back of the plant. We'll give you twenty thousand

and let you salvage these shacks and keep your teams, or twenty-five thousand for the plant as she stands—cash down!"

Lemuel repeats the figures for Joshua's benefit.

Joshua (*in fake anger*): "Don't take it Lem! We paid that for it thirty years ago."

Quincy (*ironically*): "As brickmakers, you fellows would win the blue ribbon at a horse-traders' convention. Come on, fellows, let's go." (*Moves toward door.*)

Hill (*raising his hand*): "Just a minute, Quincy." (*Addresses Lemuel*): "Twenty-five thousand cash, and we'll give you thirty-five hundred worth of common stock in our new \$50,000 corporation. If we make good, you'll realize two for one on the stock within a year. If we fail—you've got \$25,000 to the good. That's our final!" (*walks to door; addresses Quincy and Brown*): "Let's give 'em three minutes to think it over."

They exit.

Lemuel (*with a twinkle in his eye*): "If these dudes knew what we know about the brick business, they wouldn't give twelve cents five mills for their lives. I'm sold, Josh; what do you say?"

Joshua (*smacks his old partner on the back*): "I reckon this is once we've trimmed the slickers, Lem!"

Hill, Quincy and Brown reenter the door.

Hill: "Your pleasure, gentlemen?"

Lemuel (*arising*): "We aint much flattered about yer proposition, but Josh an' me are gettin' pretty well along in years, an' we've taken a mighty big fancy to you lads."

Joshua (*rises and rubs his hands excitedly, but does his best to maintain a we've taken-the-loser's-end expression*): "Y' see, we've had lots of offers fer the old plant, but never got much attached to the parties that wanted t' buy."

Quincy (*aside to Brown*): "The doggone old liar. If he's ever had an offer before it came from a junk dealer who wanted to wreck the yard for scrap iron." (*Turns to Joshua*): "Thanks, old top! Of course you understand we want immediate possession."

Joshua (*who thought his blarney had brought back an admission of virtue*): "Still go to confession do ye? That's extrordinary!"

Hill and Brown are in suppressed paroxysms of mirth. Quincy, ashamed to laugh in the old boy's face, suffers agony as he tries to keep a smooth countenance.

Lemuel (*who has been scribbling at desk, adroitly puts note in Joshua's hand, and says*): "He ain't talkin' church! He wants to move in right away!"

Joshua: "Well, he c'n have the keys when we get his check."

Quincy sits down to draw up check. While Hill, Brown and Lemuel are reading over Quincy's shoulder, Joshua tiptoes to window to read Lem's note. It ran: "We're getting out clean! Understand? No future stock assessments go! Leave it to me." Joshua slips back to desk just as Lemuel writes across the back of the check. "Payment in full for brick plant, land and equipment of Lemuel Ashby and Joshua Mapleton."

Lem (*arising and pocketing check*): "You young fellows sure does move fast." (*Addresses Joshua*): "Call Mose."

Joshua (*opening door*): "Mose! O-o-h, M-o-o-o-s-e!"

In a moment old Mose shuffles in, his face steaming with perspiration.

Lem (*to Hill*): "He's been with Josh an' me nigh thirty-year. Hope y' see fit to keep him."

Hill (*to Mose*): "You're safe, Uncle Tom."

Joshua (*extracts greenback from rusty-looking but well filled purse*): "A whole dollar fer you, Mose! Now, don't get stewed!"

Lemuel (*following Joshua's example*): "An here's one for Mandy. An' when Josh an' me gets back from Florida, I'm goin' to find out if you gave it to her?"

Mose (*whips out old bandanna handkerchief big as a young tablecloth, and shuffles to door, wiping his eyes*): "Ah 'll gib it to her, boss!" (*grins*). "But you-all better look out fo dem gals down souf—dey sho' am frisky!"

Have Joshua and Lemuel Made a Good Bargain? Look to the Next Issue to see If the Slickers Have Been Trimmed



HOOVER OUTLINES NATION'S CONSTRUCTION NEEDS—SUGGESTS WAYS *to* START BUILDING

IN A SPEECH before the convention of realtors held in Chicago recently, Secretary of Commerce Herbert C. Hoover outlined the nation's needs in regard to home building and made several suggestions which, if carried out, would help to alleviate in a great measure the present serious shortage of homes.

Mr. Hoover's speech is printed below:

"Obviously one of the most difficult problems in front of the entire country is that of housing. I need not recount to you that the cause of this critical problem has been the diversion of our economic strength from permanent construction to manufacture of consumable commodities during and after the war. In 1910 we averaged about 110 families for each 100 homes and in 1920 about 117 families. This indicates a shortage of nearly 1,500,000 homes even on the 1910 standard.

SIXTY PER CENT. OF POPULATION TENANTS

"An equally disturbing fact is that the tentative figures from the forthcoming census indicate that the total number

of homes owned by the occupiers has steadily decreased, and sixty per cent. of our population is living as tenants, a larger ratio than many other countries. If we are to build up the stability and the happiness of our people, this is just the reverse of what should happen. Nothing is worse than an increased tenantry and landlordism in the country.

"The diversion of savings money deposited with banks from investment in home building to investment in commercial channels, the secretary declared, has tended to maintain high interest rates.

USE BANK DEPOSITS FOR HOME BUILDING

"However," the speaker continued, "the regular procession of economic depression is first the lowering of prices and volume of production with the consequent reduction in the amount of capital needed and a falling rate of interest. We should expect this to happen again and interest rates to fall to the reach of the home builder with increased sums available for building.

"On the other hand, I believe we would have a much more stable economic system if we had a more regular proportion of our savings available for home building. It would seem to me, therefore, highly desirable that the amendment proposed to the federal reserve act, by which the larger proportion of the savings deposits of national banks be used for building purposes, is an advisable change. It would seem constructive, also, if forty or fifty per cent. of deposits in postal savings banks could be diverted to home building as is the case in savings banks, instead of allowing it to flow to commercial purposes.

"I view with great satisfaction the real estate men from all parts of the United States, endeavoring, as they are, to codify the practice and elevate the ideals of their profession, and I would that they take most seriously back to their communities in all sections of the United States their sense of responsibility of bringing the home within the purchasing power of the buyer and of protecting thru wise community planning and zoning laws the home from encroachment. If the rate of increase in tenantry continues for two or three decades seventy-five per cent. of the people of this country will be tenants. If the present tendency can be reversed, then in two or three decades more than one-half of the people will be home owners. A nation of majority rule should be a nation of majority ownership.

COUNTRY STILL IN THE MAKING

"The influence of the real estate men thruout the United States is most far-reaching. They in an organized way may protect the equity of the young home owner from absorption thru illegitimate fees, commissions and bonuses. The municipalities thru the enactment of wise zoning laws should co-operate with them and the federal and state governments should co-operate with them by wisely directing the use of savings deposits.

"This country of ours is still in the making. Shall we look forward as far-sighted empire builders to the condition which will confront our children in another twenty or thirty years or shall we as shortsighted, greedy opportunists exploit the present without regard to future consequences?

"I know of no greater mission for the whole of the realtors of the United States than that they should definitely undertake to organize in each local community the forces that bear on this problem for its constructive solution. United determination by the producers of materials, the owners of utilities, representatives of labor, of the local financial institutions and the local civic and governmental bodies will solve this problem. Is it not a great mission for your Association to provide the assurance of the million new homes needed by our people?"

* * *

Building 100 Bungalows at Absolute Cost

One of the latest schemes for helping solve the housing problem and at the same time an endeavor to help start construction on its way is the decision of Anderson & Cowie, well-known contractors of Chicago, to build 100 bungalows at absolute cost. The plan was conceived by Frank H. Anderson, a student at the School of Commerce, University of Chicago, and the son of the senior member of Anderson & Cowie.

When young Anderson first proposed the scheme to his father he was told it could not be done. He proved, however, that it could be done and when sub-contractors and material men were told about the scheme they were enthusiastic over it and agreed that it was a great idea. Bankers were imbued with the spirit of the idea and agreed to loan at six per cent. plus the prewar commission of 2½ per cent.

By thus eliminating all profits on everything that goes into the building a great saving can be effected. Mr. Anderson believes that the price of a bungalow can be reduced twenty per cent. and probably more. All figures will be open to examination for proof that the scheme is being carried out as stated. No more than a hundred bungalows are to be built, ranging in price from \$2,000 to \$7,500. As soon as the 100 home seekers are signed up work will be begun.

Mr. Anderson is optimistic over the results of the plan. He says, "We figure that it will not only help in the revival of building on a proper basis, but will start a program of volume business so we can later produce buildings of all types at a lower cost due to our increased purchasing power and decreased per unit overhead. Of course, anyone building under this plan will be protected against any declines of the future.

* * *

Refractories Division Drives for Members

Officials of the Refractories Division of the American Ceramic Society are making efforts to secure new members. The problems confronting the refractories manufacturers are becoming daily more complex and plentiful as the use of this product in the industrial world increases. It is the opinion of officers of the Refractories Division that in order to further the development of refractories it is necessary for everyone interested, either as manufacturer or consumer to help.

Anyone who is a member of the American Ceramic Society can join the Refractories Division without additional cost and the membership committee is anxious to have competent men as members.

* * *

File Plans for Housing of 20,897 Families

Since the tax exemption ordinance has gone into effect in New York City, plans for the housing of 20,897 families, involving an expenditure of \$100,000,000, have been filed, Henry H. Curran, borough president of Manhattan, said. 11,902 families will live in small brick or frame dwellings and 8,995 in apartments. Plans for the accommodation of the 20,897 families have all been filed between February 25 and July 9. During this period last year quarters for 6,604 families at an expenditure of \$37,143,000 were made.

The increase in the expenditure provided for since the tax exemption over the same period last year is 370 per cent. in the amount of money and 216 per cent. in the number of families provided for.

* * *

N. P. B. M. A. Directors to Meet

Three important meetings of branches of the National Paving Brick Manufacturers' Association are scheduled for the week beginning July 25 in the headquarters of the association in Cleveland, Ohio. The meetings will be held by the board of directors, the advisory committee and the committee on policy.

* * *

Speed Work on Paving Brick Movie

Plans for completing the motion picture films, that show the operations of paving brick production, distribution and use, were being completed this week by the Bureau of Public Roads, assisted by Maurice B. Greenough, executive secretary, the National Paving Brick Manufacturers Association. This work will begin during the first week in August, and be speeded up as much as possible, in order to have the initial films ready for distribution with the opening of the technical schools, colleges, picture houses and other sources of exhibiting.

WELDING *and* BRAZING STEEL *and* CAST IRON PARTS

*Right Kind of Fire Necessary for Good Work—
Tells How to Avoid Mistakes Most Commonly Made*

By G. H. Radebaugh

Asst. Manager Shop Laboratories Dept. of Mechanical Engineering, University of Illinois

ONE of the most important essentials in all forge work is a good fire. Many failures of forging are caused, not by the kind of material used, as is commonly supposed, but by poor heating in a poor fire. Altho not generally appreciated, mostly all the forging difficulties that a beginner encounters are in the fire. This is specially true when making a weld. The usual blacksmith fire is called an open fire, and it is used for general forging work. As noted in the operations, care must be exercised in building a good clean fire. The only way this can be accomplished is by removing all the old dead material and sorting all coke from the fire before discarding. Always save the coke, as no better material can be secured for use in a forge fire. The smith is sometimes wasteful with coke and it is discarded with the ashes, but every little piece should be saved. Clean coke is by many considered preferable to charcoal for heating steel, because it makes a more even fire.

GOOD BLACKSMITH COAL FREE FROM SULPHUR

Coal that will coke must be the best grade of soft or bituminous coal. Good blacksmith coal will coke easily and is also free from sulphur. If much sulphur exists in the coal, it will make welding a difficult operation.

A good method to test coal for forge use is to break a lump. If it breaks easily, crumbling up into little grains and the newly fractured faces show up bright and not dull, it is in all probability good firing coal. The coal should crumble rather than split up into layers. Soft coal used for home firing is not good coal for forge use, because it makes a very dirty fire. A few bushels of regular blacksmith coal will last a long time. Remember that dirty slack fires put dirty sulphur oxides on steel. Good coal can be purchased from any local coal dealers.

MAKING A HOLLOW FIRE

In some forging jobs a heavy scale may rise on the steel when heating. This scale is called oxide and is caused by the air coming in contact with the steel while heating. To prevent this use a good thick fire, that is, have an abundance of firing material between the tuyere and the work. The material being heated should be thoroly covered. If trouble arises in forging tool steel, build a hollow fire. The fire pot is cleaned as described in the operation. The coal is packed around the fire block, only not so high, and brick are then placed on top of this coal on the sides and rear of the block, then the block is loosened and removed. After the fire is burning freely, an old piece of sheet steel is placed on top of the brick, which makes a closed in fire. Be sure that the fire has plenty of material between the tuyere and the work. Fuel is fed into the hollow fire from the front to keep the fire well supplied. This kind of fire is quick to burn hollow and should be watched constantly. The air is excluded from coming in contact with the steel and also a more uniform heat is produced. Heat steel

slowly, but do not go to the other extreme by soaking the steel in the fire.

Removing the coke from the old fire (Fig. 1) is necessary after a fire has been used for a long time and clinkers and ashes fill up the bottom of the firepot. To get good results this old dead material should be removed. There are a few blacksmiths that merely remove a few of the ashes and then place on the old heap of dead material that lies over the tuyere a few lighted shavings, piling on coke and coal on top of them. This will, of course, burn, but it is not a good fire for the proper heating of material. Remove all the coke from the top of the hearth and place it to the rear, as shown in the view.

The clinkers and ashes are now shoveled into a bucket (Fig. 2) or other receptacle. The tuyere is next removed and the remaining non-firing material is pushed down thru the blast box.

Care should be employed not to break into the lining of the fire pot when removing the ash. The tuyere is now put back in place and the wind box lid is closed.

HOW TO PREPARE THE FIRE

The preparing of the fire bed is important. For the average fire on the plant a block $3\frac{1}{2} \times 3\frac{1}{2}$ inches can be used for the fire block. This block is placed over the tuyere, as shown in Fig. 3. When the blacksmith coal is dampened down this is called green coal.

The green coal is now placed around the fire brick, as in Fig. 4, as snugly as possible. Pack it by using the edge of the shovel as a tamper. After this is finished cover the block and remove. Coal prepared for a fire in this manner is known as a stock fire. This hole keeps the fire together and holds in the heat.

Lighting the fire, Fig. 5.—The fire is now ready to be started. Use shavings or oily rags. After lighting, as shown in the view, place them in the bottom of the fire hole and turn fan very slowly, this to prevent the firing material from going out. Break some of the pieces of coke that were placed to the rear of the hearth in operation I into small pieces. Place a few shovelful on the newly lighted fire. Increase the air blast just a little after the coke has been placed.

CLOSING UP THE FIRE

Baking the coke on the firing materials, Fig. 6.—After the firing material has burned for a few minutes, the fire hole will become hollow. The coke is pushed into the hole by using the rake, as shown in this view.

Closing up the fire, Fig. 7.—When the coke is burning freely it is good practice to mound up the fire a little with more coke before using the green coal. The green coal is now placed on each side of the fire and it is gradually worked into the fire. Sometimes it is desired to hold a fire for a short period. This is done by raking coke into a mound over the fire. It is then



covered over with green coal. A good method to hold a fire for a long period is by thrusting a piece of hard wood down the center of the fire before banking it.

After the fire is burning freely, as in Fig. 8, it is ready to use. A fire that is ready to receive the stock to be heated should not be giving off much smoke. In heating steel for forging, too much blast should not be used. The coal requires a certain amount of air to burn thoroly. If too much air is used the oxygen is not all burned out and this passes thru and strikes the heated steel, forming an oxide or scale.

KEEP AIR AWAY FROM HEATING METAL

If forging jobs show this scale it indicates that the fire is not solid and thick enough to keep the air away from the steel. When placing the material to be heated in the fire always lay it level with the top of the forge, as shown in the view. If placed low in the fire oxide will form and, also, you cannot watch the amount of heat the material is receiving. In keeping a healthy fire for forge work always be sure that there is plenty of fuel between the tuyere and the work. Do not use a burned out fire; it complicates the forge jobs and discourages the beginner.

To be successful in making welds the kind of a forge, flux, and form of scarf must be used that is best adapted to the job.

Three important essentials govern the welding of iron and steel:



A—The kind of fire.

B—Shape of end prior to making weld.

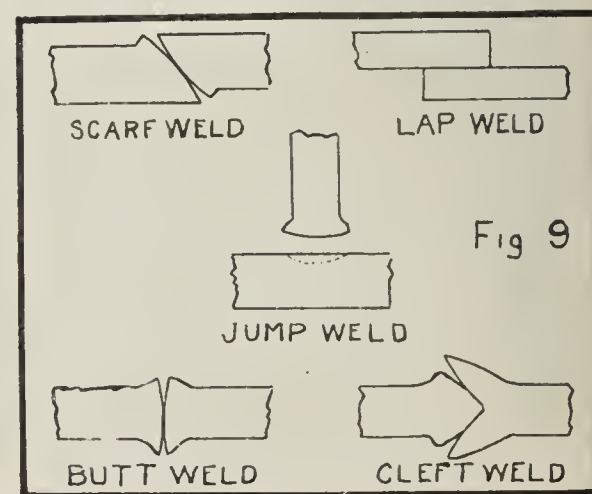
C—Kind of fluxes used.

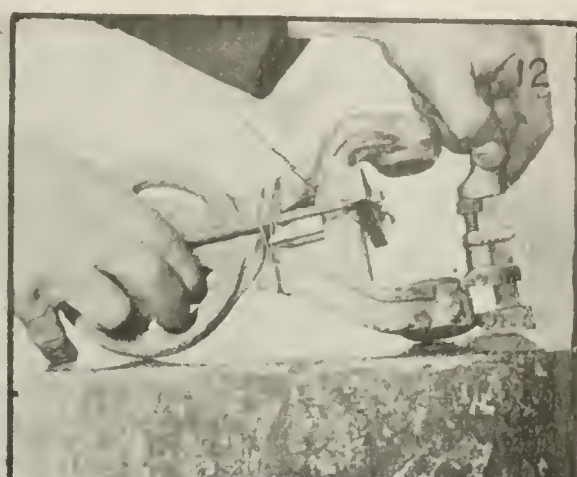
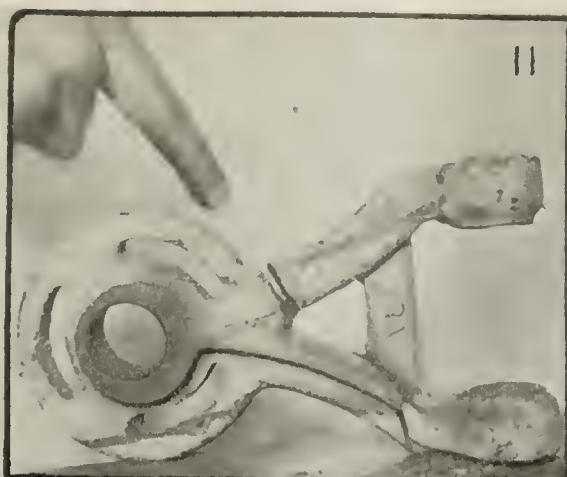
All of these are so important that if difficulties are encountered when welding, investigate the job for improper practice related to any of these essentials and no doubt your obstacle can be overcome.

HAVE WELL-COKED COAL IN FIRE

Coke, coal, and charcoal are used in a forge for heating steel or iron for welding. Bituminous coal low in sulphur is the most common fuel used. In preparing the fire for welding see to it that the fuel is free from lead, bronze, or brass that may have gotten mixed in the fuel from previous brazing or babbitting operations. Do not try to weld with a "green" fire; see to it that the coal is well coked. The fire used for welding should have a thick bed between the tuyere and the work. The necessity for this precaution is to hold to a minimum the amount of air that strikes the steel when being heated. If air from the blast coming thru the tuyere comes in contact with the steel, the heated steel absorbs the oxygen, which causes a scale to form on the steel known as oxide of iron. This scale when present makes welding impossible. To prevent this formation do not use a strong air blast when bringing the stock up to a welding heat.

There are five common methods of forming the ends of stock prior to making the weld. They are classified as





follows: scarf weld, lap weld, cleft weld, butt weld, and jump weld. A reference to Fig. 9 shows the form of these different welds. In all of these welds but the lap weld the surface of the laps are crowned. This is very important. The ends if brought together when hot stick in the center and when being forged together all the slag and dirt sticking to the metal is forced from the center outward, leaving the hot metal free from any oxide of iron. In making the lap weld the hammering should begin in the center. This has a tendency to work all the slag free from the welding surface. It is understood that a defective weld will be caused if the job is not entirely free from this scale.

FLUXES VERY OFTEN USED

Fluxes are used in welding for two purposes. Oxidation or scale formation is prevented by the flux melting and covering the heated surface and it also aids in dissolving any oxide that may have formed. Wrought iron, unless it is very thin, can be welded without flux. It can be heated to such a high temperature that the oxide is melted. When welding machine steel or tool steel it is necessary to use fluxes. Sand and borax are the two most common fluxes used in welding of soft steel, which is the common grade of steel used. Wrought iron is not used to any great extent. Some smiths use the borax plain, others mix it with equal quantities of fine clean sand, putting in twenty-five per cent. iron filings.

Another good practice is to burn the borax before it is used, as better results will be obtained. Heat the borax in a cast iron jar until melted, pour on a bench plate or any flat surface, so it will form a sheet. Small pieces can be broken off for use, or it can be pulverized as desired. There are many welding compounds on the market, but for welding the ordinary machine steel sand and borax is about as effective as any. A flux that has been offered as a trade secret and sold on the market is made by this formula: copperas, two ounces; salt petre, one ounce; pulverize these ingredients and mix with them three pounds clean white sand. If these fluxes will not work, the fire is not as it should be or the operator does not use the proper judgment in welding heats.

BUILDING RIGHT KIND OF FIRE FOR WELDING

For tool steel use a flux made of one part sal-ammoniac and

twelve parts borax. For welding tool steel to iron or soft steel, flux made from the following formula is used,—500 parts by weight of borax, seventy parts sal-ammoniac, seventy prussiate of potash, thirty-five clean unrusted iron filings. Pulverize, add water until thick, and paste results. Heat until very thick, stirring constantly. After it is cold pulverize and it is ready to use.

In arranging the fire for welding remove all the old coals and ashes from the forge fire bowl. Sort out all the caked or coked coal, taking care to remove all the ashes from the fire bowl and from the top of the forge. A block four inches square and ten inches long is placed over the tuyere iron. Green coal that has been thoroly soaked with water is placed around this block at a depth varying to the size of the forge, but never less than four inches, and tamped down with the back of the coal shovel. The block is removed and the fire started by filling the hole with oily waste, shavings, etc. The caked or coked coal removed from the previous fire is broken up and placed on the new fire. With a very light blast the coke is fired. Continue this piling on of the coked coal until a good, solid thick fire is secured; that is, burning at a bright, clear heat.

CROWN SURFACES TO BE WELDED

The job is now heated, and the ends are formed for the welds. Soft steel should be worked at a yellow heat, as the steel can be forged to shape at this heat much easier. After the two ends have been properly formed for the weld, being sure that the surfaces that are to be welded together are crowned, as shown in the sketch, the job is ready to be heated for welding. Place the pieces to be welded in the fire, cover well with coke (not green coal), heat slowly and steadily until the steel shows a bright yellow. This is the time to make the first application of the flux, either by removing the piece from the fire (this is not recommended, but is done by some smiths) or with a flux spoon made from a $\frac{3}{8}$ -inch rod. The heat is more rapidly increased, and more flux is added, until a sparkling white heat is reached. When the steel has a glazed appearance and is sparkling freely, remove quickly from the fire and after a shake or a light tap on the anvil to remove the oxide, stick the laps together and with extremely light, rapid blows from the hammer at first and heavier blows as the weld



proceeds, the job is completed. Do not work the steel too cold, if the weld cannot be finished down in one heat, reheat and work at the usual forging temperature.

BRAZING A BROKEN MACHINE CASTING

The kind of material in the broken piece determines nearly in all cases the method of repair. If a steel strap, bolt, rod or steel connection is broken, it is common knowledge among all that it can be welded, or replacement can be made usually from the plant's own repair shop. But in repairing a broken casting a somewhat different problem enters into the repair job.

Other methods of repairing.—We find that the components of brick-making machinery are made from malleable iron, cast gray iron, and steel castings. In the repairing of these castings there are several channels open for determining the best methods.

NEW CASTING SOMETIMES CHEAPER THAN WELD

The casting can be patched; that is, a strip or sheet can be placed on the piece with bolts or rivets. Sometimes it is necessary to forge or form the steel patch so that it will fit the shape of the casting. In malleable and steel castings, if their design permits the placing of such a patch, considerable time can be spent on the repair, as it probably would be impossible to get a new casting made in a local foundry. In cast iron repairing, however, it is sometimes advisable to have a new casting made, as the new part would be cheaper than the cost of the repair job. Foundries that cast gray iron are found in nearly all of our larger trading centers. The broken casting can, as a rule, be used for the pattern for making the casting. If a new pattern is required, the cost would be high, and it would not be advisable, unless all other channels of repair had been investigated and this method found to be the only solution of the problem.

INEXPERIENCED MAN CAN DO BRAZING

Brazing method.—The brazing method of repairing broken castings has not been fully appreciated by the repair man as a method of repairing that he may employ. In using this method there is no reason why even the inexperienced man cannot familiarize himself with the process and perform the operation, with a little practice, the same as a repairman in the commercial shop. In brazing the only supplies needed are the brazing smelter or solder and flux. One good flux is the household powdered borax. The tools required are the file, hammer, pliers, wrench, forging tongs and a forge. With these few tools a good job of brazing can be done on any of the three castings named.

The brazing smelter consists of fifty per cent. copper and zinc. This percentage may be changed some by makers of the smelter, but a mixture of about this proportion is generally used. This is cast into ingots and granulated into grades known as long, short, and fine grades. The short grade is usually used for broken casting repair work. This smelter can be purchased thru any local implement dealer or general supply houses.

FORMULA FOR MAKING FLUXES

In brazing cast iron castings, in case the borax flux does not give results, a flux of the following formula can be used: Boric acid, sixteen ounces; chloride of potash (pulverized), four ounces; carbonate of iron, three ounces. This mixture should be kept in a good, tight jar, as moisture or long exposure to the air renders it less effective. This preparation is added to the smelter just before applying it to the casting.

In brazing, all the grease and dirt must be removed from the casting. This can be done by heating the casting to a dull red heat, and then with a wire brush or old file remove any dirt particles left on the casting. The casting is then permitted to cool down. The broken edges of the parts are filed and are then clamped together by using baling wire clamps and bolts. Sometimes a job is of such design that it can be bolted together.

After the parts are joined together with this clamping arrangement, the job is then placed in the forge fire. This fire should be well coked and with a fairly deep bed. It is heated slowly until it gets to a bright yellow color. The flux is then applied separately or jointly with the smelter. This smelter and flux can be placed on the job with a rod which is flattened at the end. When brazing cast iron let it cool slowly, as sudden chilling may cause check cracks.

REMOVE DIRT FROM PART TO BE BRAZED

It is estimated that if a good job of brazing is done on a casting that it has within eighty per cent. of its original strength.

Preparing the broken casting for brazing.—In this operation the casting must be thoroly cleaned, placed in the forge fire, and heated to a dull red heat. It is then taken from the fire and the dirt and scale are easily removed with a wire brush or an old file. The edge of the casting should be beveled, as shown in this view. This is done to permit easy flow of the smelter when the brazing operation is being performed. (Fig. 10.)

The broken casting in position to be clamped together. Fig. 11.—The broken casting should be fitted together and the clamping arrangement decided upon that will hold the casting in a positive position. The alignment of holes must receive careful attention when clamping, as there is some possibility of trouble after the brazing is completed if the holes are out of alignment. Some mechanics have found that by placing the flux on the cracked surface of the job before placing them together that it causes the smelter to flow freely.

PIECES SHOULD BE SECURELY CLAMPED

Clamping the pieces together.—Fig. 12.—The clamping or fastening may be done by using screws, wires, bolts, or clamps. If it is at all possible, the pieces should be held in such a way that the job can be turned over during the brazing operation without changing the alignment. This is essential in order that the brazing flux and the smelter can be placed on all sides of the casting.

A good job of brazing cannot be done unless the pieces have been securely clamped together. It pays to spend considerable time on this operation, because you will encounter discouraging conditions when the job is in the fire if the pieces are not firmly held together.

Brazing and casting.—Figs. 13 and 14.—Malleable castings, gray iron castings, and steel casting can be brazed. The same brazing methods and materials are used on these castings.

PROPER PROCEDURE IN BRAZING

After the pieces have been clamped, as shown in Fig. 3, a fire is built in the forge. The green coal should be permitted to coke well before placing the casting on the fire. Heat slowly until the casting shows the color of a bright yellow. With a flattened steel rod, as shown in this view, apply the flux and smelter. This must be done while the heat is maintained at the bright yellow temperature. The smelter should run freely at this temperature. Do not remove the casting from the fire when turning it over. When you are satisfied that the smelter has flown into the break, the casting is then permitted to cool down. When brazing a gray iron casting it is good practice to permit the casting to cool down with the forge fire. This will prevent check cracks from showing up.

The completed job.—Fig. 15.—The job is removed from the cooled down fire and, if still hot, it is placed in ashes. This, of course, is not necessary unless it is thought that the casting will crack by contraction strains coming on the weaker parts of the casting. After the job has cooled down so that it can be handled, the brazed seam can be cleaned up with a file. The casting is now ready to place in service.

The BUILDING SITUATION *in the* EAST

THE INDUSTRIAL BUREAU of the Merchant's Association of New York, has just completed an interesting investigation of the construction industry throughout the country, and makes the statement that "general stagnation prevails." It is pointed out in the findings that the industry in the United States represents a total wealth of approximately \$77,000,000,000, or 26.8 per cent. of the entire wealth of the country.

It is estimated that 11,000,000 persons derive their living, directly or indirectly, from the industry, either as workers or as members of workers' families. The construction of houses, factories and other buildings represents the largest single item in the industry, with railroad construction second in importance.

Reference is made to the Special Senate Committee on Re-construction and Production, of which Senator William M. Calder was chairman, and the work of this committee in its investigation. This committee reported, it is set forth, that the primary factors in the housing shortage were coal, transportation, direction of credit and taxation, and that the secondary factors were labor, materials and building operations. Specific legislation was proposed, but up to the present time Congress has not adopted any of the committee's proposals.

NATION'S BUILDING IS GROWING

In thirty-nine cities, operations are under way representing a total cost of \$405,688,612. Among the eastern cities Baltimore leads with a construction program calling for an investment of \$25,000,000, while Wilmington, Del., has work under way representing an amount of about \$13,000,000. Philadelphia, Pa., is also classed in the latter division, with an exact total closely approximating \$14,550,000.

The New England district rounds out the first week in July with totals improving for contracts awarded, showing \$6,262,800 in valuation. This is about \$3,000,000 under the corresponding period of a year ago, but well over \$500,000 in excess of the figures for the period in 1919, and about \$4,400,000 larger than the total for 1918.

HOUSING WORK STILL PREDOMINATES

The tone in the industry in this section is improving, for while conditions remain spotty, yet there is far more desire to proceed with pending work than was evidenced in earlier weeks of the year. The trend continues towards housing work, with small dwellings assuming a lead.

Hudson River brick is being sold here at \$20 a thousand, delivered; Connecticut production is quoted at \$22. Face brick, water struck, kiln run, is priced at \$30 a thousand, while rough texture and other choice selections of front brick are around the \$50 mark. In certain quarters, common brick can be obtained in truckload lots at \$18.

FIRE BRICK PRICE DROPS

No. 1 fire brick, high grade, has declined to \$70 a thousand, delivered, following the lessened call for the material that comes, usually, with the summer season. Standard No. 1 fire brick has found a level of \$60. Fire clay is being sold at \$25 a ton.

Standard sewer pipe is now forty per cent. off list in the Boston district, while double strength material is twenty-five per cent. off. Flue lining is forty per cent. off list, and

wall coping, thirty-five per cent. Terra Cotta partition blocks, 4 x 12-in., are listed at \$150 a thousand, while the 8 x 12-in. size is \$280 a thousand.

At Providence, R. I., common brick is quoted at levels from \$26 to \$28, delivered. Partition tile, 4x12x12 in., is selling for \$220 a thousand, and 8x12x12 in. size for \$390. Sewer pipe, single strength, holds at thirty per cent. off list. Drain tile, three in., is priced at twelve cents per ft., and four in., at sixteen cents.

Fire brick is holding at \$80 a thousand, with high grade material being turned at close to \$100. Fire clay is being retailed at \$1.50 a bag. Flue lining, wall coping and other burned clay specialties are maintaining at established figures, and there is no immediate indication of any pronounced change.

WAGE SCALES DECLINE

Wage scales for labor in the construction industry continue to decline in different New England cities. Bricklayers at Hartford, Conn., have accepted a cut of ten per cent., following a strike of several weeks' duration. Other labor also has been reduced proportionately here, the average being about ten cents an hour.

The past fortnight has shown a decided tendency towards decreased building operations in New York, brought about to a large extent by the current discussion for a reduction of wages of building labor.

Housing operations in Brooklyn and on Long Island are moving along at an encouraging pace. Brick is being absorbed in sizable quantities for this work, with terra cotta and other burned clay products also in demand.

WAGE REDUCTION IN PROSPECT

Wage differences at New York bear strong indications of the likelihood of a strike, unless the matter can be thrashed out at a proposed series of conferences between the Building Trades Employers' Association and the Building Trades Council, and other local labor organizations.

The employers have been urging the men to accept a reduction of \$1, holding that such an action will eliminate the possibility of a reduction of \$2 and even \$3 per day, in the months to come. Up to the present time the men have refused to accept this decrease.

The majority of construction in the city is done under the closed shop agreement. The prevailing rate of wages is fixed by an agreement which became effective in May, 1920, and which expires on December 31, 1921. The agreement, with certain exceptions, provides for a wage scale of \$9 per day for journeymen, and \$7 for helpers, under forty-four hour week. The wage is an increase of \$1 per day over the amount previously in force.

LABOR FORCED TO TAKE CUT

Employees in the industry in Westchester County will be forced to accept a wage reduction of \$1 a day, according to a decision made by Samuel Untermeyer, acting as arbitrator in a wage dispute in this section. The change becomes effective on September 1, with a rate of \$8 instead of \$9. The controversy has been prevailing since early in April.

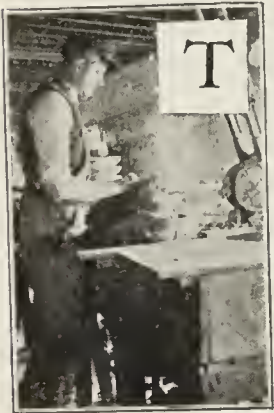
There has been a call for material in the New York
(Continued on page 143)

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

DEVELOPING A MOUNTAIN OF CLAY



THE LITTLE industrial city of Alberhill, between Elsinore and Corona, Riverside County, California, is the logical result of the development of a mountain range of clays, rising from the Temescal Valley and included in the 2,000 acre holdings of the Alberhill Coal & Clay Co. of Los Angeles, 77 miles southeast.

It is difficult for one who has not seen it to visualize the part these mammoth deposits are destined to play, not alone in the industries of Southern California but in those of the entire world. This mountain range of clays, graded by the hand of nature to furnish material from which may be made the finest porcelains or the coarsest brick or tile, is practically untouched as yet.

James H. Hill, head of the Alberhill company and of the war research work in clays for the United States Government, is acknowledged to be one of the best informed men in this country on clays, their products, potentialities and

possibilities. He is a firm believer in his own product, which he has owned since 1890, and, as he talks of it, with all the convincing enthusiasm of a boy and the keen analytical sense of a business man, it is clear that this is nothing that touches the surface of his interest but a part of his very being, something that is growing with his growth and strengthening with his strength. In short he has, as he tersely phrases it, sold himself the Alberhill idea, namely: the application of vocational training to clay products.

ALBERHILL HUGE STOREHOUSE OF CLAY

Alberhill is situated about in the center of the range. It came into prominence during the war when, as a result of Mr. Hill's research work, it was found that the beds that were being worked on a small scale for clay and coal were an undeveloped source of wealth and usefulness. Engineers, chemists, and mechanical experts were mobilized and experiments were pushed so that at the time the armistice was declared, all was in readiness for mammoth production, to include the so-called "floating brick" which entered into the construction of concrete ships; other discoveries of permanent value were made at that time.

On the northwest corner of the property the face of the working reveals successive strata of fire and brick clay, plastic ball clay, lignite, refractory clay and blue clay, with variations that include a large body of china clay. Fourteen distinct varieties have been proved valuable out of a total of twenty varieties found, while much of the tract is as yet untouched. In 1920, 120,000 tons of clay were mined and used from Alberhill. Firms in Los Angeles that need



View of Los Angeles Pressed Brick Co. Plant, Showing Gravity Conveying System from Pit to Plant.

a clay superior to the common brick variety, draw their supply from there and samples have been sent to all parts of the United States. In these places, independent of the local Alberhill Research Bureau, clays are being tested, looking toward the erection of new plants at Alberhill or in its vicinity.

GRAVITY USED TO CONVEY RAW MATERIAL

A level 100 acre tract is reserved in the valley circling the clay range. It will be utilized for manufacturing



View of the Alberhill Clay Mountain with Plant of Los Angeles PRESSED Brick Co. in Foreground.

plants which will be so located that they will be fed their raw material by gravity direct from the pits, saving all haulage charges. One factory for each form of clay product will be located at Alberhill, so that it is certain to be the seat of manufacture of every commodity made from clay, the chief object being to bring the clays into their deserved prominence and demonstrate their usefulness and economy to all who visit the place. To further emphasize this, a residential section has been reserved on a gentle slope across the valley and tracks, where workmen's homes, built entirely of brick and tile, will be grouped about a civic center, with a view to beauty and harmony. Twelve of these attractive homes are already built. Because clay products have entered entirely into their construction this is known as "The Clay City."

TWENTY-SEVEN CLAY PLANTS IN LOS ANGELES

Twenty-seven clay working plants are now operating in Los Angeles. The several large and successful brick, tile and pipe manufacturers, produce clay products in sufficient volume and value to make the group a lucrative asset to the city. Besides these, something of the variety and scope of the industry may be gathered from the mention of such concerns as the Batchelder-Wilson Co., specializing in art tiles and grown to an international reputation in a few years, from a modest beginning in Pasadena; the J. A. Bauer Pottery Co., makers of statuary, garden pottery and commercial pottery; the American Encaustic Tile Co., whose wall, floor and faience tiles are shipped all over the world; the Italian Pottery Co., confining itself to art wares made from local clays; the Vernon Pottery Co., makers of hotel china; Kolar & Myers, producers of acid pots and stoneware for chemical purposes; George Tomasek, who caters to the exclusive demands of the assayers; the Western Pottery Co., which makes a specialty of chemical stoneware. Several of these prominent bodies are considering material enlargement of their plants and outputs.

ALBERHILL COMPANY TO INSTALL CONTINUOUS KILN

Under the urge of the Government's war needs, the Los Angeles PRESSED Brick Co. built its latest and most modern plant right at Alberhill and has demonstrated the worth of the gravity system of supplying material direct from the pit, as both economical and profitable. This single plant turned 54,000 tons of clay into brick and tile during 1920, and the addition of a late-model continuous kiln is proposed which will double the present capacity.

With the Santa Fe's building of a spur track from Elsinore Junction to the main line at Corona, and the accession of a variety of clay manufacturers at Alberhill, a gigantic output is assured.

LOS ANGELES GREAT CENTER OF CLAY INDUSTRY

Construction is being rushed forward on the half million dollar chinaware plant of the Empire China Co. at Burbank, which draws its supply of base clay from Alberhill. The Standard Pottery Co. of Los Angeles has begun the manufacture of china and art pottery at its plant in the city; Eastern potteries have representatives in the field investigating the opportunity for large scale manufacture of sanitary wares and a Los Angeles firm is also considering the advisability of entering that line. Within recent months, Los Angeles has made great progress in the development of high-resistance refractories. Chemical industries are seeking pottery suited to their needs. While orders for terra cotta structural shapes have been refused because of inadequate facilities for manufacturing, plans are under way to correct this condition.

The Los Angeles Chamber of Commerce is in close touch with individuals in the clay business looking toward the location of a group of new lines of clay products within the next six months. It is confidently believed that this year will witness clay developments that will not only make building



One of the Tunnels and Track of Gravity Conveying System in the Vast Clay Deposits in the Mountain of Clay at Alberhill, Cal.

cheaper but will add millions of dollars to the total of factory output and other millions to the \$3,000,000 already invested in clay working plants there. There is assured a factory for making sanitary pottery, bath tubs, lavatories, toilets, hospital wares, etc., for which superior clays are available. There is also to be a factory for making full



Above View Shows Some of the Pretty Hollow Tile Bungalows Constructed for Workers in the Clay Plants at Alberhill. This Section Will Eventually Become a "Clay City."

lines of insulators used in power lines, industrial plants, heating and lighting in all forms.

EVERY VARIETY OF CLAY WARE MADE

A factory for the manufacture of conduits of every size and capacity is also to be opened; another will manufacture terra cotta for architectural purposes, while still another will seek to keep up with the growing needs of chemical companies. Chinawares of new designs are being rapidly offered and the output is to be doubled. Other clay products manufactured in Alberhill, Los Angeles and vicinity are common, face and fancy brick, fire brick, roofing and building tile, enameled tiles and shapes, architectural terra cotta, floor tile, faience decorative tiles, garden and art pottery, domestic and commercial stoneware and chemical stoneware, drain and irrigation tile and pipe, electrical conduits, sewer pipe, sewer brick, flue linings and the famous vitrefractory forge and furnace linings. And in all of these industrial plants, orders are being refused because it is impossible to fill them, so great is the demand.

When Charles J. Kirk, president of the Universal Sanitary Manufacturing Co. of Newcastle, Pa., visited the clay deposits of the Alberhill company this spring he went carefully over the shafts and workings and gave out the following interview:

CLAY MOUNTAIN IS REVELATION

"I have heard many stories in my time about the existence of mountains of clay, and have investigated them in the interests of my manufacturing business. But the mountains have invariably turned out to be molehills and I have grown skeptical. I never dreamed, however, that there could exist a veritable mountain that would combine in a single group of connected deposits, so vast and varied a supply of high-grade clays. To me—and I have made many investigations—this mountain is a revelation. It is difficult to grasp its potentialities, for it might almost be said to hold for an indefinite period the source of national supply."

Speaking of the future of the clay work, James H. Hill, president of the Alberhill Coal and Clay Co., has this to say:

"In the first place it must be understood we have neither land nor stock for sale. The war and our research work have uncovered tremendous potentialities for the raw product in the Southern California hills and, so far as they concern clay, we propose to proceed in an orderly way, along broad lines, to turn these potentialities to industrial and commercial facts. We have a tract two and one-half miles long and a mile wide, with proven clay deposits that are

almost inexhaustible, including the coal needed for producing gas; glazing compounds and adjacent deposits of silica and feldspar for china and magnesite for refractories; also enough water for industrial and domestic needs.

TO PERMIT BUT ONE PLANT FOR EACH PRODUCT

"We propose to center here a group of allied clay industries, covering the field, with one producer in each line, carefully selected on established merit. All of these are to be built on a homogeneous plan, so they will get their supplies direct from the pits, by gravity, at minimum haulage expense, the deposits in the hills being a natural storehouse which obviate the need of storage facilities and save such space for the productive plant. Within ten years the number of plants about Los Angeles should be doubled, existing plants should be materially enlarged and the value of the annual output increased to \$100,000,000.

"We propose the maintenance of a community and research laboratory for the working out of all problems of treatment and improvements; the segregation of the residential from the industrial sections; the building of none but clay-products buildings, public or private, and special technical clay instruction in the local schools. We propose to make Los Angeles, thru Alberhill, the scientific, economic and informatory center of the clay industries.

"Concentration of the clay industries at the source of supply as it will be here, will secure the greatest economy and efficiency for the allied trades in the following ways:

1. Economy; no freight charge for shipment of raw material; no labor charge for re-handling. The materials move from the pits to the plants by gravity.
2. Los Angeles freight rates for the finished product.
3. Elimination of storage expense.
4. Reduction of waste by breakage.
5. Favorable natural air drying conditions.
6. Immediate accessibility to any kind of clay for any emergency.
7. A trained community of workers."



Pottery and Stoneware Markets Quiet

The Louisville (Ky.) Pottery Co., reports that it is running full time, but that movement of merchandise is quiet. This is the off season for flower pots, while the stoneware demand is very quiet, due to the worst drought of years, having ruined the berry and fruit crops, this resulting in very light preserving, and resulting small demand for stoneware jars of all kinds. K. P. Snyder is away for a short vacation in the East.

Operatives View Wage Reductions Favorably

With the close of the thirty-first annual convention of the National Brotherhood of Operative Potters at Atlantic City, July 15, a special gathering of the pottery manufacturers at Bedford Springs, Pa., July 21, for two days, and a general wage conference between the Labor Committee of the Potters' Association and the Executive Board and the Conference Committee of the Brotherhood at the Ambassador Hotel, Atlantic City, August 1, there has been much of late to occupy the attention of all associated with the trade, either from a buyer's or seller's standpoint.

The mere fact that so few of the proposed price list changes were "put thru" by the Brotherhood convention shows clearly that the executive officers and the conservative element dominated at the convention. This is considered important.

Before the Brotherhood convention assembled, the pottery manufacturers presented the executive officers of the Brotherhood with thirty-seven proposed changes in shop rules, which the manufacturers proposed to inaugurate. All of these were designed for the sole purpose of improving workmanship and to take another step toward the improvement of production.

Prior to the Brotherhood convention, the Labor Committee of the Potters' Association suggested to the Brotherhood Executive Board that those who took part in the foregoing wage conference, come into the meeting, clothed with full authority to enter into agreements, "sealed, signed and delivered," and that what agreements were entered into should not be sent to a referendum vote of the craft before becoming a law, from the side of the workers.

The convention, however, looked upon this suggestion in an open manner, and the result was that the entire situation was left to the discretion of the Executive Board and the Conference Committee to work out the best working agreement possible for all parties concerned, manufacturers as well as employees.

During the early part of the Brotherhood convention, the fact was brought to the surface that the convention would be willing to accept a reduction in wages, provided, however, active operation of potteries was insured, as it was pointed out that it would be better for the craft to have steady employment at a reduced wage than a high wage with only a few days per week.

All classes of buyers have been playing a "watchful waiting" game in the pottery market. What buying there has been of late has been along conservative lines. It has been the opinion of the buyers that the pottery market could hold at high levels in view of the fact that other lines of merchandise were on the decline, as to price, but, the manufacturers have been stocked up with materials bought at the top of the market, and also have been compelled to pay a high wage scale, war bonuses and all that sort of thing. Therefore, the hands of the manufacturers have been tied to a greater or less extent.

Signs are now in the sky that the market will suffer a decline, but just what percentages will be authorized by the individual operators none can tell. Two or three manufacturers within the last fortnight have advised their trade of a revision in their selling lists, these reductions varying from seven to ten per cent. or more, according to the character of ware.

There will be a good demand for American dinnerware this fall, judging from expressions of buyers who have been in the market of late, but it may come late. This will create congestion in many plants, should the rush to buy come suddenly. The impression seems to be general, that a "reasonable" reduction in the selling lists will bring forward a lot of business, for there are evidences just at this time that buyers are holding off placing their orders with this sole thought in mind.

Pottery manufacturers today are buying very little raw clays, for the reason that they are stocked up with carload after car-

load bought at the peak of the market. These same stocks could be ordered today on a basis of from \$2 to \$4 per ton lower than existing stocks cost. This is only one item which pottery manufacturers have on hand which was bought at a high price.

* * *

China Company to Enlarge Plant

The United States China Co., Valparaiso, Ind., has plans under way for extensions to its plant to cost about \$100,000. The work will consist of two new buildings, comprising a main structure, 100x300 ft., two-story, brick, for general operating service, and a one-story building, 50x50 ft., to be used as a sagger-making department. Five new kilns will be constructed at the plant. It is proposed to carry out the expansion during the summer. The extensions will provide for an increased working force, totaling close to 300 men thruout the plant.

* * *

Operatives Reject Benefits Resolution

At the annual meeting of the National Brotherhood of Operative Potters, Atlantic City, N. J., July 7-12, a resolution providing for benefits to retired workers from the unemployment fund was rejected. The proposition was to make eligible all members in good standing twenty years, and who, at the age of sixty years, become unable to follow their trade. The convention also rejected a resolution to make citizenship the basis of membership qualifications in the organization. A resolution was approved at the gathering granting the right to the branch of the industry, known as the grogware pressers, to change the name to the sanitary porcelain pressers.

* * *

Buyers Keenly Interested in Pottery Display

That the period of retrenchment in the pottery field is nearing an end, is the opinion of C. B. Reddrop, secretary, the Bedford China Co., Cleveland, Ohio, following what may be termed a sensational week at Chicago in conjunction with the Hotel Managers Association convention in that city. Not only were hotel interests indicating a tendency to purchase new pottery materials, particularly of the vitrified china and cooking ware varieties, but institutions, hospitals, railroads and other factors sent representatives to investigate what exhibitors had to offer in these and kindred lines.

"We cannot say that much actual business was booked at the Coliseum exhibits," says Mr. Reddrop, "but there was a keener interest among buyers in what the trades have to offer, which leads us to believe that the prospects for large sales in the immediate future are good, certainly better than we would have expected a month or six weeks back. This interest is best shown by the fact that in our booth we had as many visitors on the first day this year as we had in all the week last year."

The Bedford China Co. had a booth three times as large as it had last year, and was the only cooking ware exhibit present. Some new business was booked, this being of the small order variety, buyers indicating that they wanted to try out in a practical way some of the many new lines the Bedford has been putting out in the last year.

* * *

Remillard Will Again Begin Work

From San Jose, Calif., comes the news that the famous old Remillard pottery and brick kilns will soon be opened. Owing to the lack of transportation facilities, the plant has been idle for several years but a spur track has at last been run to the very doors of the plant so work in the kilns will soon be resumed.

The SUPERINTENDENT

Helpful Hints for Practical Men
Whose Problem is Maximum
Production With Minimum Cost

Forty Years' Experience with Up-draft Kilns

"E. E. Fleurie, Brick Maker," owns a brick plant at New Cumberland, Pa., with which he has apparently been very successful, judging by the fine home he has built and the demand there is for the high-class brick he is putting on the market. His brick burner is his brother, William Fleurie, who has made a forty-year study of burning brick in an up-draft kiln.

Recently, to a representative of *Brick and Clay Record*, Mr. Fleurie told some of the things he had learned in his forty years of brick burning. Speaking of up-draft kilns, Mr. Fleurie said: "I am well satisfied with the up-draft kiln, and I believe I can make brick cheaper in coal cost of drying and burning than the general run of down-draft kilns show. But that cannot be done by every burner. For the unskilled burner, the down-draft kiln is probably the best. We keep an accurate account of our coal expenditure and we know the output in good, marketable brick. We burn 215,000 in a kiln, and we use about fifty-five tons of coal in doing that. But to that must be added the amount of coal used in drying the brick. We use about three tons a day, and that dries 15,000 brick, which is a day's work. For the number that goes into a kiln that would mean about forty-five tons, which is a total of 100 tons used in drying and burning 215,000 brick. That is less than half a ton of coal per 1,000 brick. But I realize that that is not in any way a standard by which to judge other up-draft kilns. It depends on the experience and ability of the man that does the burning.

"I will take for example a certain plant where they had 450,000 brick in each kiln. I was employed to follow a man that was let go. In the kiln in question, about one-third of all the brick had been ruined by bad burning. The arch brick were simply melted down. Many of the other brick, even far above the arches, had been so run together that they were broken in trying to get them apart. Thus about 150,000 brick were wheeled out and dumped. You can imagine what that

meant in cash. The firing had been too heavy at first. The first error had been in placing four layers of brick in the lower walls of the arches. It is extremely difficult to get four layers so placed properly burned without creating so much heat that it will ruin many other brick in places more easily reached by the heat. The second error was that of too heavy firing at first. The trouble with that kind of firing is that it frequently causes the brick in the arches to run together, and that prevents the heat from drawing freely thru the brick. I took that same kiln and filled it with brick. Then I had to



View of Three Updraft Kilns of E. E. Fleurie, "Brickmaker,"
New Cumberland, Pa.

feel my way, for the clay was different from that in which I had previously worked. About all clays differ in the way they have to be handled in burning, and it is only by long experience that a man can accustom himself to appreciating the difference in clays when it comes to burning.

"I put only three courses of brick in the walls of the arches. Then I fired carefully. The result of that burning was that

Stages of Vitrification

As a clay passes thru vitrification to fusion, it takes on certain structures which divide the periods into separate steps. These different steps show a difference in the fracture of the clay when the piece is broken and in the amount of water absorbed by it. In common building brick there is no sign of glassiness. The clay absorbs water readily, and in considerable amounts. The color of the brick is usually a light red and the iron is to a large extent present as uncombined ferric oxide.

Incipient vitrification is indicated by the darker color and especially by the fact that the clay absorbs much less water and also takes up the latter more slowly. The fracture of the brick when incipient vitrification has not taken place is of an earthy nature and the water absorbed amounts to usually about fifteen per cent. At incipient vitrification, however, the clay begins to show a smoother texture and the absorption of water is usually around seven per cent. The strength of the piece is also greatly increased. However, neither of these two degrees of burning permit the brick to be used for paving purposes.

In the dense vitrification stage we observe that the pores are largely closed and that the absorption of water is reduced to about one per cent. of the weight of the clay. The color is darkened to a chocolate brown and at this point the maximum toughness is displayed by paving brick clays. We might say, therefore, that the clay is best or strongest at this point. The fracture shows a dense, compact, but not a glassy surface.

At complete vitrification there is practically no absorption of water, the clay is burned still more, and the fracture shows a decidedly glassy appearance. Many clays suffer and decrease in toughness tho the crushing strength may be very high. The rattler tests will bring out this point very sharply.

there were almost no spoiled brick. The brick in the arches, instead of being melted down, were of a beautiful dark red color, and were picked out and sold for face brick.

"In my experience of forty years, I have learned how to fire so as to keep the arch brick from melting and also to keep all of the brick from sticking together. I no longer sand in setting the brick. They are made in a sand mold and need no sanding besides. Sanding when setting is necessary when the firing is uncertain and unskillful. A skillful burner succeeds by regulating the heat as needed, and no rule can be given for it.

"The principal secret is in heating the brick up before the real burning begins. Put the fire in slowly so as not to create a burning heat. That kind of heat will permeate the whole mass of brick and, passing out of the top, will create a draft thru the brick that will not keep the high temperatures in and around the arches but will distribute them among the brick. The whole process is about this: We first dry the brick in the steam dryer. Then we 'water-smoke' the brick in the kiln for about sixty hours. At this time the heat is so slight that it merely draws the moisture out of the brick. We call it water-smoke because we can see the moisture rising from the kiln. After that we do what I call heating them up, which process we continue for thirty-six hours. I think the temperature during that process is around 1,200 deg. F. Then we slowly increase the temperature to approximately 1,800 degrees, which we consider the real burning, and which is continued for forty-eight hours. That completes a six-day period of burning. A half day more may be figured for the heat remaining in the kiln after we conclude the burning. Then, after we have opened the kiln, it takes about six days for the brick to cool off.

"There is, however, such demand for the brick that often we begin to haul them out before they have cooled and when they are still so hot that it is very difficult to handle them.

"About ninety per cent. of our brick are hard brick. The soft brick are those in the top layer of brick and in the corners. We stack our brick forty layers high in the kilns. In many up-draft kilns the proportion of soft brick is large because, on account of bad burning, many of the brick on the sides are not burned enough and there is more than one layer of soft brick on the top, while the corners, which are always difficult to reach with the high temperatures, are productive of large quantities of soft brick."

✕ ✕ ✕

Placing Belts on Pulleys

The placing of small and medium-size belts on pulleys is very often a problem. Here is a method, however, which should be generally adaptable. With the pulleys standing still, particularly when the belts are rather light or when located in places where there is not much room, as between overhead pulleys, push the belt onto the pulleys as far as it will go. Then while holding the belt with one hand, use a screw driver or similar tool to assist in getting the belt over the edge of the rim, using the rim as a fulcrum. Each time the belt is lifted it can be pushed onto the face of the pulley and when the edge of the belt is over the rim it can be pushed into place, or by turning the machinery it will go into place itself.

✕ ✕ ✕

Changing a Belt to Fit New Pulley

To find the change required in a length of belt when one of the pulleys on which it runs has been changed to a different size, multiply the difference in the diameters of the old and new pulleys in feet by 1.57 and the product will be the number of feet necessary to take out or put in the belt.

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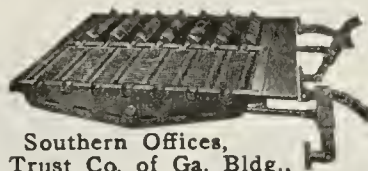
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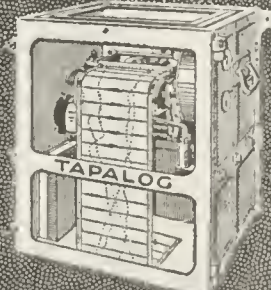
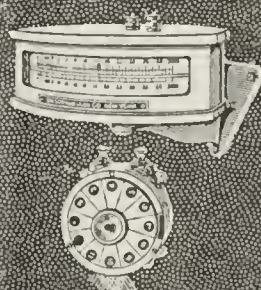
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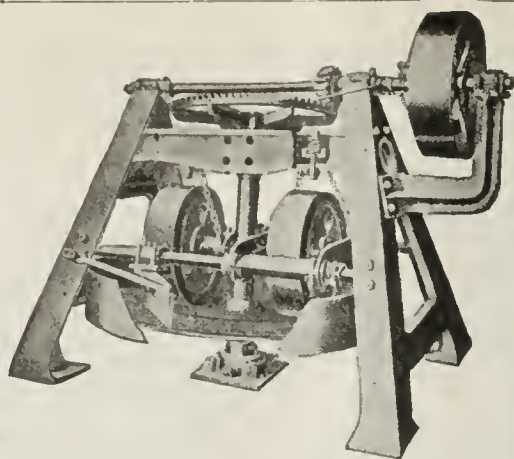
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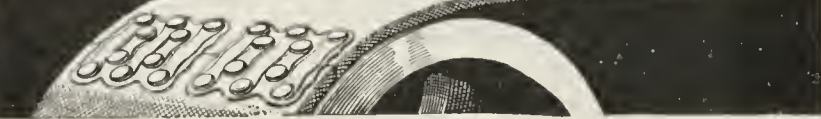
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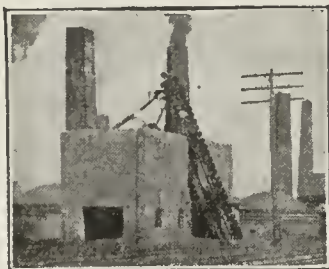
Once on, Crescents are on to stay. A Crescent joint will outlast the most durable belt. No part of belting is punched out or weakened. Maximum strength maintained. Belt runs same as endless on pulley side. No knocking or thumping. Noiseless. Joint hugs pulley. Full power transmission insured.

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Let us quote you on your requirements.
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DEVOTED TO
CAR BUILDING
ALONE
CARS
FOR
EVERY MINING
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INDUSTRIAL
PURPOSE
CATALOGS ON
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WATT MINING
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QUESTIONS

A Two Cent Stamp May Bring
You Advice That Will Stop
a Waste, Improve Your Ware
or Lower Your Production Cost

Address all communications intended for this department
to "Editor Questions and Answers," care of "Brick and Clay
Record," Chicago.

Wants to Know How to Calculate Prices

979. *Mississippi*—We will appreciate your advising us of some rule to use in making prices on different size farm drain tile. That is, we would like to know how to figure the differential to be based on 4-inch tile. For instance, if the four inch tile is three cents per foot, how should we figure the price on 6, 8, 10 and 12-inch tile?

This inquiry was referred to a large drain tile manufacturer in Illinois who replied:

"In regard to prices on farm drain tile, we would say, that these should be based on the cost of manufacture. But no doubt your party in Mississippi will have to sell his drain tile at prices being quoted by his competition. We usually figure that it costs the same per ton to manufacture 4 inch, as 5 and 6 inch drain tile, but you can always get a slight margin over the 4 inch tile on the larger sizes because you will not sell as many.

"If the Mississippi manufacturer makes 6, 8, 10 and 12 inch tile in one foot lengths on the same machine, he will find that his costs will approximately run equal per ton on each size. We would also suggest that he find out what prices are being quoted in his territory and using his costs he ought to arrive at a profitable figure."

✻ ✻ ✻

What Are Wages Paid for Labor?

978. *Nebraska*—Can you tell us approximately what brick setters are paid for setting brick in round down-draft kilns that hold about 75,000 each? We are setting mat, face and common brick. This is a new plant and our men would like to get on a piece work basis from the cutter to loading the product on cars for shipment. We would also appreciate any information you can give us on handling 5x8x12 tile.

An Ohio plant pays brick setters and tossers 27c per thousand brick. The men on the cutting belt are paid 35c per hour. Wheelers of smooth brick are paid 50c and rough brick 60c per thousand. The handling of 5x8x12 block is on a day basis.

An Illinois plant pays for setting common brick in round down-draft kilns 34c per car of 620 brick; for face brick set on edge and faced, the same rate is paid. Face brick set flat are paid for at the rate of 46c per car of 620 brick, and face brick set flat and turned are paid for at the rate of 49½c per car of 620 brick.

These prices are according to the wage agreement for the past year and will be up for revision soon. It is expected that there will be a reduction made in the above scales.

✻ ✻ ✻

Wants Data on Scove Kiln

982. *Illinois*—In order to temporarily increase our kiln capacity, we would like to have information on the following questions:

1. Can brick and tile be burned together in a scove kiln, set-

and ANSWERS

Best Authorities in Every Clay working Branch Are Called Into Consultation—Their Advice is Free to You, Thru These Columns

Should a reply be desired by letter, send a stamped and addressed envelope with your question, and it will be answered promptly.

ting the brick fifteen courses high and the tile eight courses high upon the brick; or, setting the brick eighteen courses high and the tile seven courses high upon the brick?

2. We understand that the customary width of a scove kiln is from twenty to twenty-four feet where wood is used in the burning. Since the price of wood is prohibitive, could a scove kiln be entirely coal-fired if the width were twelve to sixteen feet?

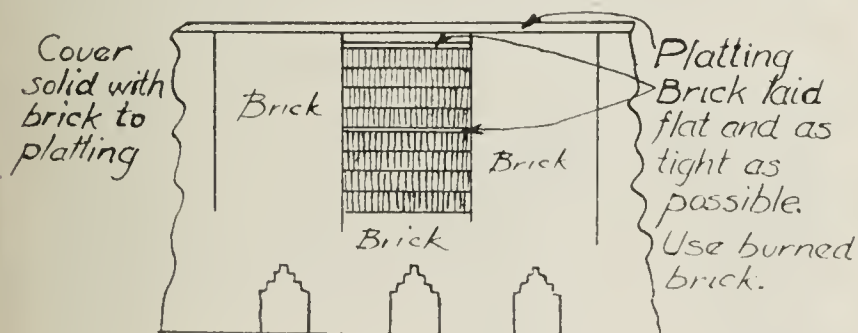
3. Could waste heat for drying purposes be drawn from the eyes of a scove kiln, or could it be drawn thru a duct built on the outside of the casing which is connected by means of a hood to a hole opened in the platting?

4. In firing with coal would the burning proceed in the usual manner of alternating the firing from side to side, or should the firing be carried on in both sides at once?

Information on the above questions and any other points which in your judgment we have not covered, will be highly appreciated.

A ceramic engineer who has had considerable experience in burning was consulted on the problems outlined above, and his reply which takes up the questions in order, is as follows:

"1. I have seen an attempt made to burn brick and tile together in a scove kiln perhaps a dozen times but without success. Personally, I have never attempted to burn drain tile and brick together in an up-draft kiln. It can probably be done with fair success if enough experimenting is done to find the method of doing it. The efforts I saw in this line resulted in the tile being too soft. If I should try it I think I would set the tile in only every other bench and set 8 courses of tile on fifteen courses of brick. Then if it is possible, place a course of brick laid flat on top of the fourth course of tile, then four courses of tile on this flat course of brick. Then I should place another course of brick on top of the top course of tile and lay the brick flat as on the fourth course of tile. Thus:



Method of Setting Brick and Tile in Up-Draft Kiln

"In this way the draft can possibly be checked but would not guarantee it to be a success. Would suggest that two benches be tried the first time and the results may suggest a better method.

"2. With regard to the width of scove kilns in which coal is used as a fuel, a scove kiln can be fired entirely with coal when the kiln is twenty to twenty-four feet in width as well as with wood. There is no necessity of cutting the width of

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When you buy Leschen Wire Rope you are not experimenting, for its ability has been proven by its service record.

For use on cranes, cableways, derricks, excavators, steam shovels and other heavy duty equipment, we recommend HERCULES (Red-Strand) Wire Rope, because its unusual durability enables it to work with economy under such conditions.

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New York, Chicago, Denver, San Francisco



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A REPUTATION

Caldwell

Dependable Water Pressure

Caldwell Tubular Towers give you a positive, dependable water supply at a good pressure all year 'round.

They are strong and durable, and yet so simple you can easily erect one yourself. Approved engineering principles throughout and excellent workmanship, backed by thirty years' experience, make them a permanent, satisfactory investment.

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INCORPORATED

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Boss
SYSTEM

Boss Ten-Hour Dryer

ORIGINAL
Boss
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Brick and hollow ware dried in TEN HOURS with either WASTE HEAT or EXHAUST STEAM. One-third less cost to build—two-thirds less cost to operate.

Boss System of Burning

50% less coal consumed and 50% less time required in burning each kiln. Less kilns required to meet a certain given capacity than when burning the old way.

Dryers and kilns designed and built—write us regarding your drying and burning difficulties.

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SYSTEM

J. C. Boss Engineering Co.
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ORIGINAL
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Will keep your pit free from water. Pumps continuously without attention or adjusting. Handles any fluid up to 40% solid when agitated and is particularly suited to Clay Plant needs.

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Distributors in all principal cities



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Mortar Colors

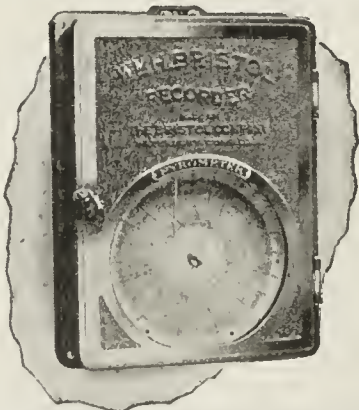
Home builders demand a beautiful color with their brick. Ricketson's colors give brick charm, freshness and warmth in appearance.

40 years proves their permanency."

For Brick, Mortar, Cement, etc.

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Milwaukee, Wisconsin

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tells the workman at a glance just what the temperature conditions are now, what they have been, and in what direction they are leading. With this knowledge he can readily obtain close regulation—and even inexperienced workmen can do better work.

Get copy of Bulletin
AE-291

THE BRISTOL COMPANY - Waterbury, Conn.

They Do Produce Results

We refer to

Those little ads you have noticed in our Classified Ad Pages.

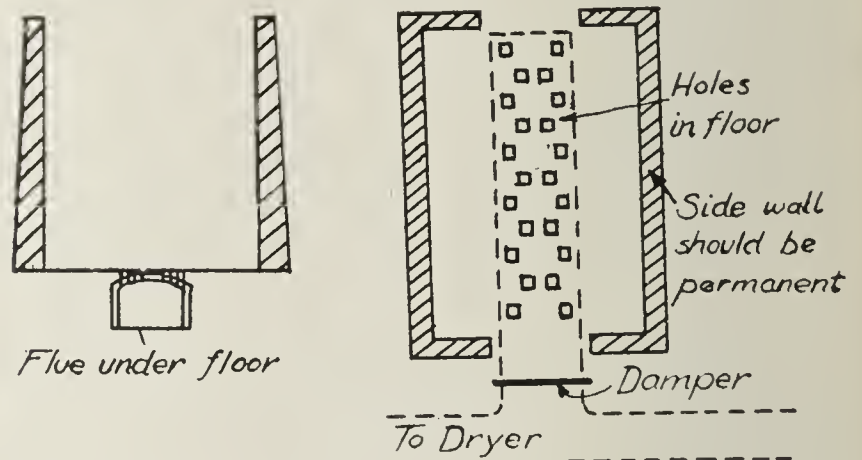
It is the decision of concerns who have used them. Try one.

Brick and Clay Record

the kiln in order to use coal as fuel. Use grate bars at least forty-eight inches in length. Watersmoke with slow fire until steam is disappearing on top (as with wood) then close door and raise heat as fast as kiln will take it. A caution as to watersmoking with coal: the tendency is to fire up too quickly. After a fairly heavy bed of coal is on the grates the bed should be allowed to burn down pretty well before re-firing. The smokeless fire that pours hot air into the kiln not only saves coal but will not tend to soot the kiln. In case the kiln soots and the draft is stopped it is necessary to shoot the particular bench where the draft is stopped. The shooting is done by making a small bomb of a 10 inch piece of 1 inch pipe, wad wet paper in one end for 1½ inches, pour in powder for 6 inches and place fuse in powder, than wad the open end with wet paper. After lighting fuse, which should burn at least ten minutes, throw thru fire box to center of arch and shut the fire doors. The explosion will clear the kiln of soot.

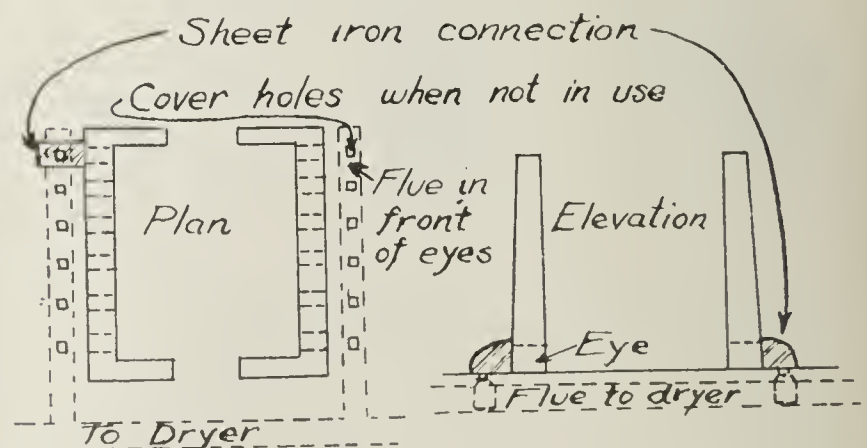
"When the brick in the heads of the benches show settle, pass coal over the ends of the grate bars, and throw chunks of coal (about six inch) thru fire boxes to center of arch. This will settle the center of the kiln and is called chunking. This operation is performed every six hours and about a half dozen chunks thru each fire box is sufficient. Fires should be cleaned every six hours and cleaned well—the grates should be freed from clinker. Hot job, but necessary.

"3. There are many instances where waste heat from scove kilns is used for drying. Either of the two methods shown is efficient but the simplest is to draw heat thru the eyes.



Suggestion for Arrangement for Utilization of Waste Heat from Up-Draft Kiln.

"4. To fire with coal, start at the end of the kiln the wind plays against (these boxes burn out faster) and fire one box after another around the kiln. Coal is put on fire as fire requires to keep the arches at even temperature. With forty-



The Preferred Method of Drawing Heat from Up-Draft Kiln.

eight-inch grate, after kiln goes on hard fire, about three or four large shovels at forty-five minute intervals will be sufficient. As the heat varies from box to box, the amount of

coal will vary. The man on the job can easily judge for himself.

"In firing with coal a sufficient ash pit is required to hold ashes for six hours, when they should be removed. The ash pit should be deep enough to keep ashes away from grates as otherwise the grates will burn out; there should be some form of door for ash pit and one for the fire box. Do not hurry the center of the kiln, the settle there should be a trifle behind the heads or sides and the heat can be easily brought up with chunks thrown to the center of the arch. Caution should be used in the amount of chunks thrown in as the arch can be melted down if too much coal is passed to the center."

From the superintendent of a large brick plant in Maryland, where updraft kilns are in use, the following suggestions were received:

"1. The writer has never burned tile and brick in scove kilns, but has in the common up-draft kiln with permanent walls and furnaces on the outside; but I see no reason why this could not be done. I would, however, set a few brick up next to the scoving to assist in holding the tile in place, and I would prefer not less than eighteen courses of brick, as tile are easily checked by cold air if too near the top of the arch.

"2. With wood we have burned up to thirty feet wide and even wider. You could burn twenty or twenty-two feet with coal. I would not advise any wider for tile, but we burn thirty feet with all brick.

"If you set brick all the way up around the outside of kiln, do not set them too tight, as the strong draft thru the tile will steal the heat away from the sides and ends.

"Just here, let me tell you how we platted our kiln in burning brick and tile in the same kiln—one course of platting, about one inch apart; then across this, one course of good brick, tight; open this latter some while water-smoking; as water-smoke leaves, close tightly; as soon as fire begins to appear put on another course of platting, starting two feet from the heads on each side and same distance from each end; plat out from each side until about three feet are left in the middle. This regulates the draft and forces fire to heads and center. I have never seen better burns than we made with this method.

"3. I certainly would not draw heat from the eyes of a scove kiln. If you could arrange to draw it from the top after kiln had been closed not less than twenty-four hours, this might be satisfactory.

"4. In firing with coal, I should burn both sides at once. You, of course, will have sufficient grates to carry your heat to every part of the kiln. In a kiln of this size, there should not be over six feet of dead space in the center of the kiln and the regular twelve inch grate run from outside of scoving to this dead space.

"The ash pit under these grates should be of sufficient depth and kept clean at all times to insure good combustion and to carry the heat up into the body of the kiln.

"If you are not familiar with this type of kiln, you may find you cannot keep all this grate covered at the start without getting too much heat and it will be necessary to spread your fire as your ware will stand same."



To Spend \$9,000,000 for 14 New Schools

News of interest to brick manufacturers of Chicago should be contained in the announcement that \$9,000,000 is to be spent for the construction of fourteen new school buildings in that city. Construction of five of the new schoolhouses will be started within a month, and a month after that seven more schools will be begun and during the third month it is hoped to begin four more.

Electric Motors and Generators for all requirements of the Brick and Clay Industry



BURKE ELECTRIC CO.

MAIN OFFICE AND WORKS
ERIE PENNSYLVANIA

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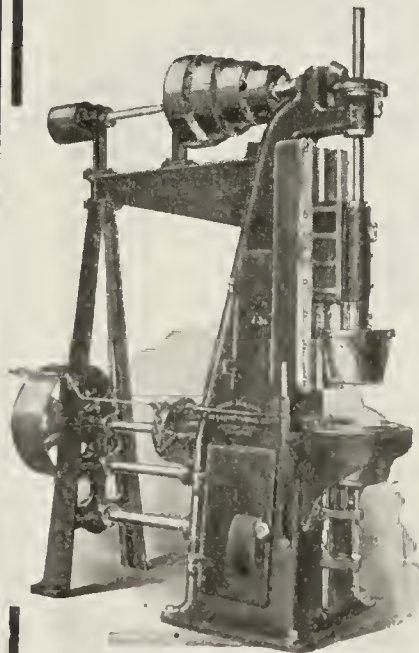
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If you are a manufacturer of Flower Pots, Nozzles, Insulators, etc., and due to your machinery you are not getting quality and uniformity in your ware, WHY DON'T YOU WRITE TO SOMEONE WHO CAN HELP YOU?

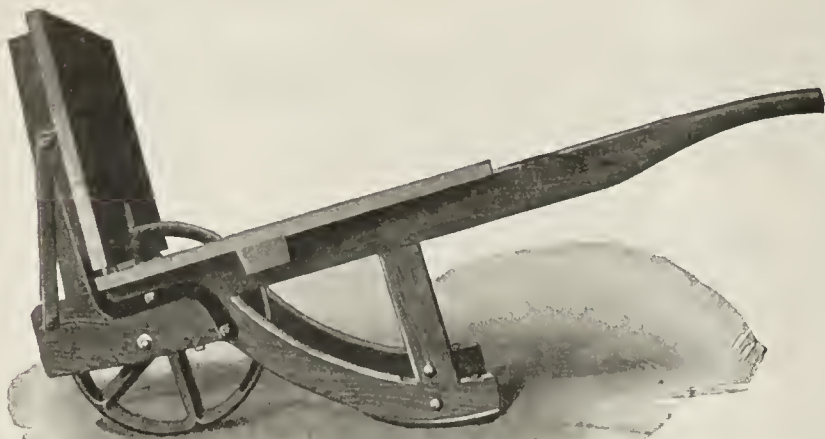


The Baird Machine & Mfg. Co. would be glad to hear from you and will furnish all information without obligation. Send a sample of your clay with inquiry.

THE BAIRD MACHINE & MFG. CO.

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DETROIT, MICHIGAN

The Invincible Barrow



This favorite barrow has lost none of its popularity. We furnish them for either brick or sewer pipe and with plain wood, babbitted or spring bearings. They are honestly constructed thruout. On account of increased manufacturing facilities we are able to make immediate delivery.

Write for prices.

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PEABODY COAL COMPANY

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OPERATING 36 MINES
WITH ANNUAL CAPACITY
OF

18,000,000 TONS



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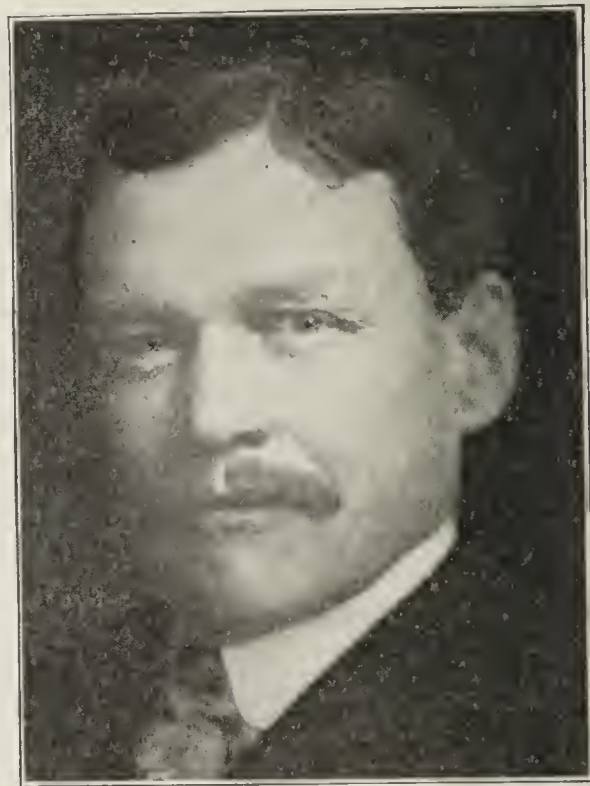
"PEABODY FOR SERVICE"

IN *the* WAKE of *the* NEWS

Being Brief Mention of a Host
of Interesting Happenings in the
Varied Fields of Clayworking

Death Takes Bernard Chambers

The death of Bernard Chambers, of the Chambers Brothers Co., manufacturers of brick making and clay working machinery, has been announced. Mr. Chambers was in his sixty-sixth year and death came very suddenly from an attack of heart trouble. He had been connected with the Chambers Brothers Co. for forty-five years and at his death was acting in the capacity of treasurer.



BERNARD CHAMBERS

During the last two years Mr. Chambers underwent two rather serious operations, the last one in September, 1920. This was thought to have corrected trouble following an earlier operation and during the late winter and early spring he had spoken of feeling unusually well.

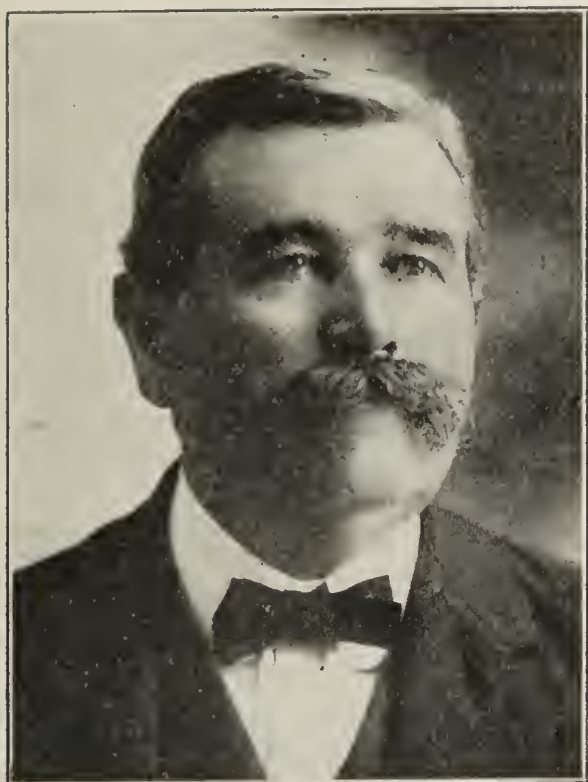
He is survived by his widow and two sons, one of whom is in business in Tacoma, Wash., and P. B. Chambers who is with the Chambers Bros. Co.

J. C. Steele Dies Suddenly

J. C. Steele, of J. C. Steele and Sons, Statesville, N. C., died July 13 at his home in Statesville at the age of eighty-two years.

Mr. Steele was one of the guiding lights in his town and a pioneer in the manufacturing line. He established the firm now known as J. C. Steele & Sons thirty-three years ago and built it up to a position of eminence in the industry. Mr. Steele was president of the Imperial Furniture Co. of Statesville, and was one of the respected and prominent citizens of the city.

When he returned from the Civil War Mr. Steele started with little more than ambition and the will to work. He ran a saw mill successfully for several years, and sold it and purchased a



J. C. STEELE

brick plant in Statesville. During his life he held several positions of prominence in his city, serving as mayor during a term of two years.

Mr. Steele is survived by his wife, four sons and a daughter.

George Kruer Visits Columbus

George Kruer, sales manager of the Briggs Co., of Lansing, Mich., was a business visitor in Columbus, Ohio, about the middle of July.

Going Hunting for Business

James T. Howington, of the Coral Ridge Clay Products Co., and A. P. McDonald, of the P. Bannon Pipe Co., of Louisville, Ky., are both out of town for a few days, scouting after some proposed work out in the state, which looks rather promising.

Makes Business Trip to Detroit

Emmet Howard, manager of the Columbus (Ohio) Fire & Face Brick Co., left soon after the middle of July on a business trip to Detroit, Mich. He stopped off at Ann Arbor to visit his mother. Mr. Howard spent several days in Cleveland and Cincinnati recently going over the building situation.

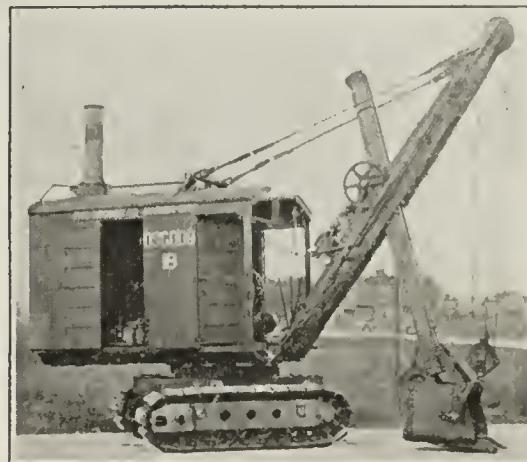
John Baker Goes to Omaha, Neb.

John Baker, formerly sales manager of the brick department of the Hocking Valley Products Co., and later connected with the Columbus Builders Supply Co., has taken the position of manager of the brick department of Sunderland Bros., of Omaha, Neb., a large retail concern. He has taken the place of Mr. Klein, who resigned.

Californians Enjoy Vacation in Country

Among San Francisco brick and tile dealers who have recently returned from outings in the country is S. W. Smith, manager

Load at Less Cost Per Yard with a New OSGOOD 18



Compact and Powerful Sturdy and Serviceable

Mounted on Continuous Tread,
Traction or Railroad Trucks

Write, Phone or Wire **TODAY**
for full information

THE OSGOOD COMPANY

MARION, OHIO, U. S. A.



The Marion "Rust" Special Feeder Mixer

is designed especially for hard, rough usage in the brick plant. It will speed up the efficiency of your plant, keep your offbearers always busy and cut your costs to the bone. It will increase the percentage of perfect ware by giving a perfect uniform mix to your clay at all times.

To install a MARION "RUST" SPECIAL means the saving of money because it pays for itself in a short time and then keeps on saving for you.

Let us send you information concerning our complete line of clay plant equipment.

Marion Machine Foundry & Supply Co.
Box 395
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Buy "signed" valves —
with the Jenkins Diamond
Mark and signature
on the body.

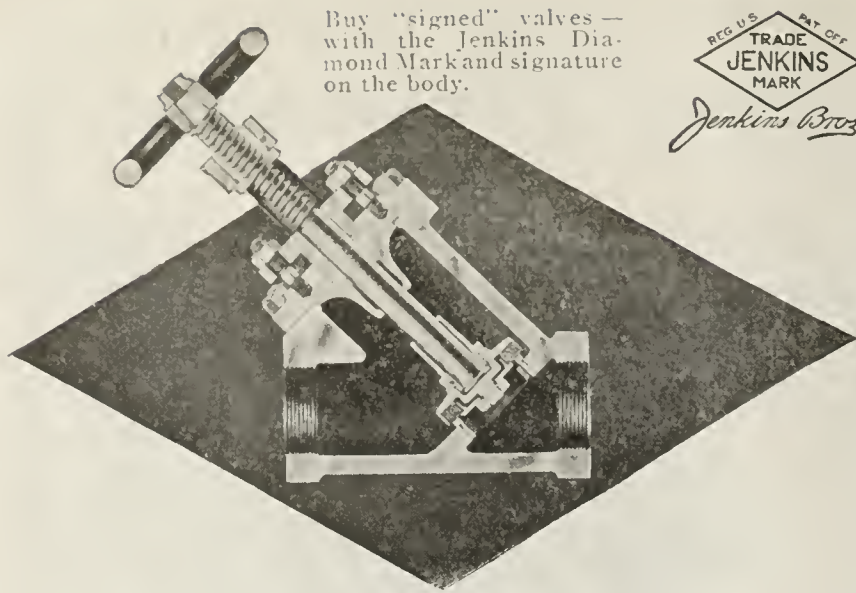


Figure 296

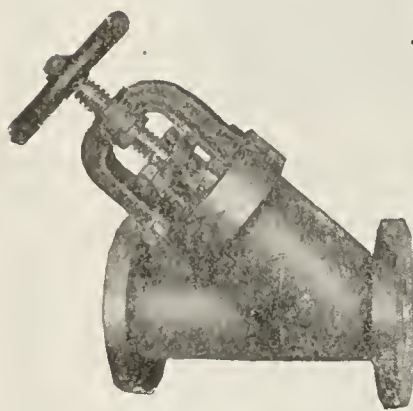


Fig. 297—flanged

Jenkins Iron Body Y or Blow-off Valve, standard pattern for 150 pounds working steam pressure or 250 pounds working water pressure. Fitted with Jenkins Renewable Disc. Has full, straight opening almost in line with the pipe. Used for Boiler, Blow-off service, and for handling thick fluids. Screwed or flanged.

At all supply houses.

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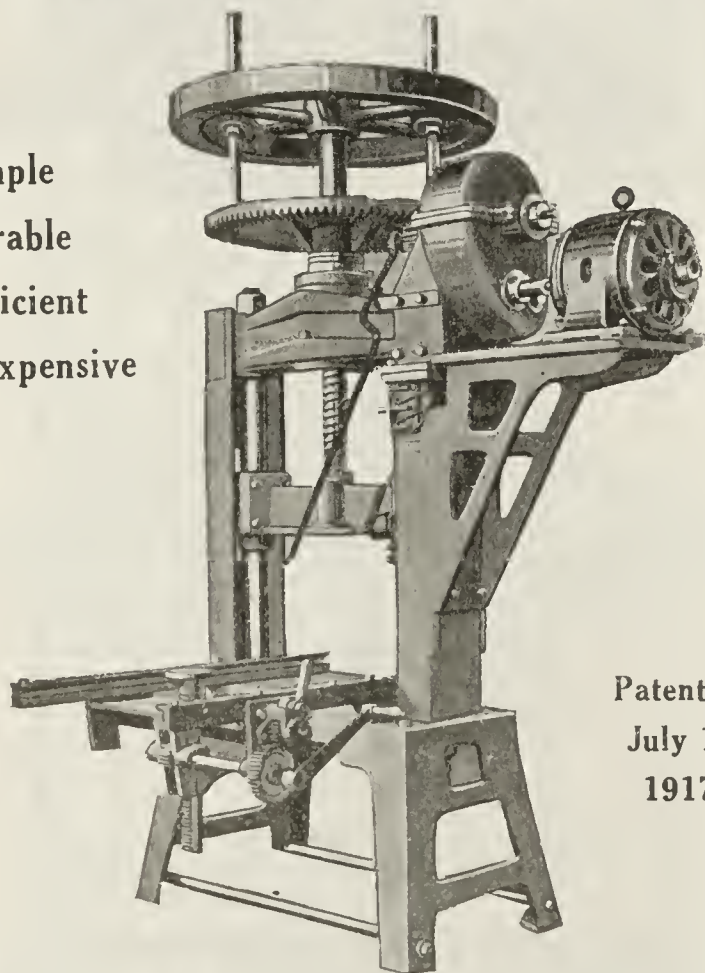
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Jenkins Valves

SINCE 1864

Mueller Electric Seggar Press

Simple
Durable
Efficient
Inexpensive



Patented
July 10,
1917

Mueller Machine Company, Inc.
Manufacturers of Modern Clay Machinery
Trenton, N. J.

of the United Materials Co. With his family Mr. Smith spent three weeks at The Pines at Bass Lakes.

John T. Roberts, manager of the Stockton Fire & Enamel Brick Co., is enjoying a three-weeks vacation in the redwoods of the Sequoia National Park.

Puts In New Boilers

The S. P. Brick Co., of Exeter, Cal., has installed a new set of boilers which will add to the present efficiency of this yard which is running to capacity limits.

Fires 50,000 Brick Kiln With Electricity

The Vitrefax Co., of Los Angeles, has added a new dryer building to its plant and is making many new additions for the near future. A new kiln of 50,000 brick capacity has been fired recently, specially designed with down-draft, with special reference to the electric-furnace products which have been recently perfected by Thomas Stanley Curtis, president of the Vitrefax Co.

May Rebuild Sewer of Vitrified Clay

Manufacturers of vitrified clay products in Los Angeles, Cal., look with favor upon the recent report of the special commission appointed to investigate Los Angeles' sewer needs. The report declares that the present outfall sewer is disintegrating under the action of decomposition gases in the sewer and definitely recommends that the new outfall sewer be built to resist this action. Vitrified clay manufacturers have always argued that their product alone will withstand these deteriorating agents.

Organize Tile and Sewer Pipe Company

With a large market assured for their product, owners of the Indio clay deposits near Los Angeles have taken steps toward the organization of a company for the development of the property on a producing basis. The new company to be known as the Interlocking Tile and Sewer Pipe Co., will be capitalized at \$250,000. Directors elected at the first meeting were: J. A. Gordon, president; J. A. Nelson, vice-president; J. P. McNally, secretary, and J. Win Wilson, treasurer.

The quality and extent of the clay deposits are declared by experts to be some of the most valuable on the Pacific Coast. The company expects to be fully financed with construction of the plant under way early in the fall. The new enterprise, it is claimed, will provide a cheaper source of supply of building tile, drain pipe, pressed brick and other clay products for the Imperial and Coachella valleys.

Report Builders Leaving San Francisco

Due to the continued inactivity in building in San Francisco and the bay cities, the dealers in brick and other materials report a very small amount of business, except in the valley towns and in southern California. In those sections business is booming; many new plants are being built and improvements made. But in San Francisco all is quiet. Many hopeful opinions are heard on the streets and many predictions are made of a speedy settlement of the labor controversy, which is held responsible for the local slump, but there is also much skepticism. Many voices are heard bewailing the fact that all the expert builders and contractors are moving to other cities where work is plentiful and that San Francisco will find herself at the "little end of the horn" when building operations are resumed.

Whereas the bay situation is more or less dormant, building in Los Angeles and other parts of California is breaking all records. Outlying brick and material yards are doing capacity business and the many new clay industries, from which so much was hoped, are exceeding all expectations. One of the largest

and most progressive of these industries has just opened a laboratory in Los Angeles, a very distinct innovation, the "only key to which is an honest desire to do something worth while." The use of the laboratory is offered free to all those who wish to experiment or investigate and clay and all necessary materials are furnished to those who wish them. Many famous architects and sculptors, as well as teachers and school boys and girls, are working there with great enthusiasm.

Use Alberhill Deposits

The Los Angeles (Cal.) Pressed Brick Co. has been doing considerable development work on its extensive clay deposits at Alberhill, Cal. This property has not been operated for nearly fifteen years. Inability to obtain clay equal to its demands has resulted in the decision of the management to ship about fifty car loads per month to its Los Angeles factory, beginning in July. This work is under the supervision of John Mills, an expert on Alberhill clays.

At the start teams and auto trucks will deliver clay over trap loading platform to gondola cars below, but later on the haul of three quarters of a mile will be motorized, the clay being delivered to bunkers, thence by gravity to railroad cars.

The Los Angeles Pressed Brick Co. owns valuable holdings of clay in three other counties, totalling upwards of 2,000 acres.

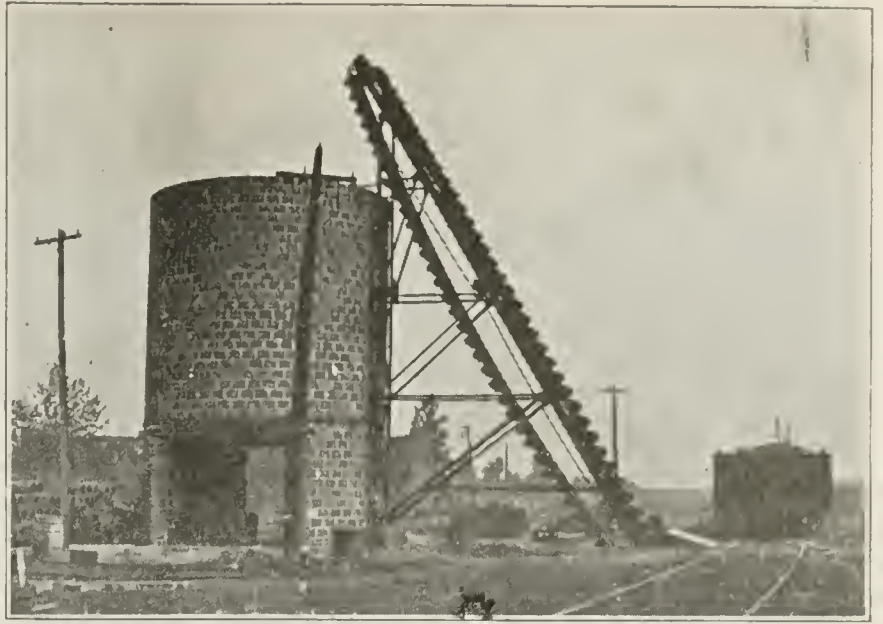
Installing Much New Equipment

Howard Frost, recently back from the East, where he went in the interests of the Los Angeles (Cal.) Pressed Brick Co., of which organization he is president, has started to double the capacity of his plant. He has found this necessary for two reasons—first to supply the ever increasing demand for his brick, tile and terra cotta for the expected trans-Pacific and South American needs, as well as for the growing need right in Southern California. Second, to prove to such centers of face and enamel brick, hollow and roofing tile and architectural terra cotta as Chicago, Cleveland, Philadelphia, Boston and New York, that the Pacific metropolis is well able to furnish such materials for its own consumption and to pass them on to the industrial world. While the rest of the country is showing a slacking in building, Los Angeles and vicinity is doubling up monthly on its record along construction of buildings, both public and for homes.

In order to facilitate work, the Los Angeles concern is installing a series of large clay storage sheds equipped with modern conveying machinery and it expects to have these completed before the close of the summer. These sheds measure 175 feet in length by ninety-five feet in width and are fifty feet deep. They are acknowledged to be the largest on the Pacific coast. They will have a capacity of 1,280 tons to the bin, about 11,000 tons in all. This is an amount equal to 220 cars of clay.

The sheds are of reinforced concrete, fifteen feet high, with structural steel beams rising above their concrete bases thirty-five feet. They were manufactured by the Llewellyn Iron Works of Los Angeles. A specially constructed conveyor, operated by electricity, will be connected with the sheds and will carry the crushed clay from a huge hopper and drop it in the storage bins where it will be left to "ripen." This "aging" process is an advantage in face brick and tile manufacture, as it increases the value of the product when burned. The basic advantage, however, is that this process does away with the slow and laborious manner of shovelling clay from cars by man power.

It now takes thirty men to shovel the clay from three cars in a full day, whereas, by the new system, the cars are dumped directly into a giant hopper that is located under



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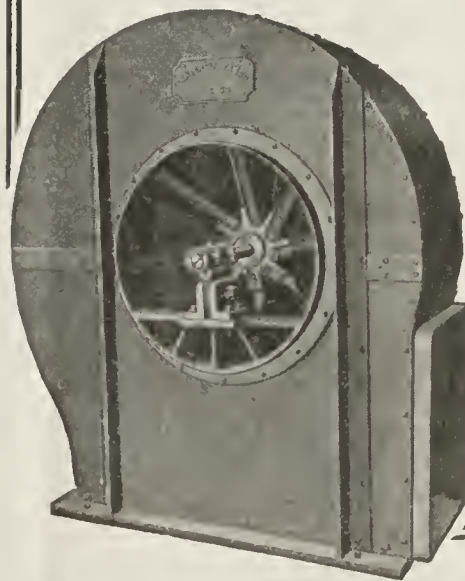
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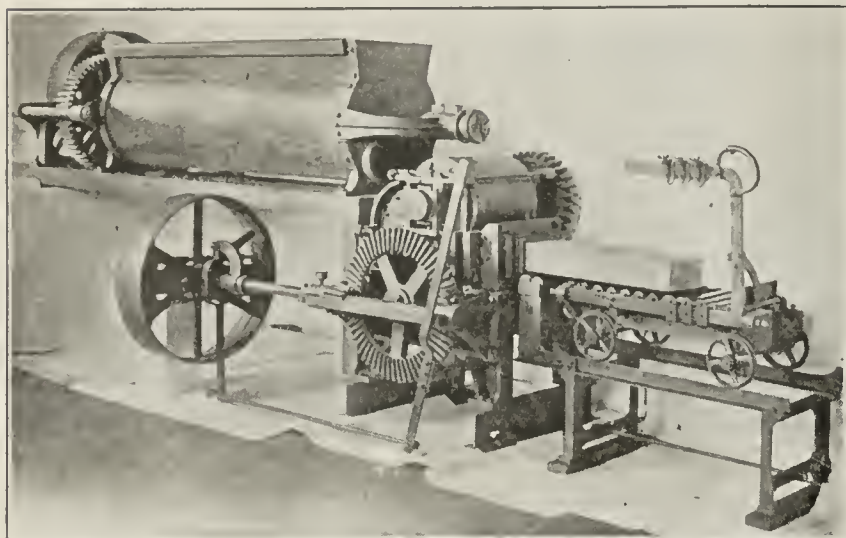
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the tracks of the unloading yard at the plant, and the clay is conveyed to the bins by the conveyor. Part of its equipment is a monorail system running directly over the bins. This latest type of monorail is equipped with large grab buckets into which the clay is dumped by the conveyor; it is then swiftly carried to the bins and tossed into place. The Stephens-Adamson Co., one of the largest American concerns of its kind, is installing the conveyor. This company recently established a branch in Los Angeles.

The Los Angeles Pressed Brick Co., in order to keep pace with the building wave that is surging over Southern California, is to electrify its Los Angeles manufactory. It has branch plants at Alberhill, Santa Monica and Port Richmond, all of the most modern type. Over 400 men are now employed in the manufacture of face and enamel brick, fire brick, roofing tile and architectural terra cotta.

It has put its chemical research department into the hands of Y. Y. Wong, a graduate of the Ohio State University and considered one of the best informed men in the country in ceramic arts. Mr. Wong has been devoting his time for months to searching out the process formerly used by the Chinese to give their tile and enamel the rare lustre and rich colorings for which they were famous and which is now a lost art. The restoration of this process will be of incalculable benefit to the industry because of the increasing demand for the soft beautiful colorings. He is fortunate to be connected with this company as its chemical research department is well equipped and all clay men know that such experimentation is one of the vital requirements of the industry.

Louis Wanka, superintendent of the company's terra cotta department, has grown up with the work. As a matter of fact he has been with it for forty years and it is under his personal supervision that the wonderful ornamental figures that are to be placed on the Brownstein-Louis Building at Eighth and Figueroa Streets, are being made. This building will be a credit to Los Angeles when completed.

Wisconsin Lime Has Excellent Month

Despite all strikes and adverse building conditions in Chicago, the Wisconsin Lime & Cement Co. is completing one of the best Julys it has ever had. They have recently added to their line face brick manufactured by the Danville Brick Co., which recently changed its output from paving brick to face brick.

May Build Plant at Lincoln

Clay from the old pits south of Lincoln, Ill., was gathered and taken by a representative of the firm of Wilcox Bros. of McLean, Ill., to be tested at their brick plant to learn if the clay is satisfactory for clay product manufacture. If arrangements and material are satisfactory, a plant will also be erected at Lincoln.

Want Power Rates Reduced

Several of the brick manufacturers of Indianapolis have signed a petition filed by the Indiana Public Service Commission asking for a reduction of power rates asked by the two Indianapolis power companies. The manufacturing establishments ask that the surcharge rates be reduced approximately fifty per cent. The petitioners declare that when the last increase was awarded the companies' coal costing \$4.22 was one of the reasons used in obtaining the grant. It was set forth that coal has dropped about a dollar a ton.

Indiana Prices at Low Level

Prices in Indiana continue low as compared to production costs, tho as one manufacturer said, the public thinks prices high. Business has improved during the past month and the

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general feeling among manufacturers is that the great crisis has passed. A large volume of residential and apartment house construction has helped this end of the business, tho road improvement work has been held up most of the year.

Drain Tile Company Dissolves

The Zuber Drain Tile Co., Columbia City Ind., has filed official notice with the secretary of state in Indianapolis that its corporation will be dissolved.

Coal Moving Slowly in Kentucky

Movement of coal from Kentucky mines continues very light, with prices lower on most grades, due to light demand. It is held by coal men that this light stocking will result in heavy demand, scarcity, and shortage of shipping facilities later, but consumers refuse to agree with the coal people relative to shortage or higher prices later on.

Kentucky Farmers Buying Little Drain Tile

The outlook in Kentucky and Southern Indiana this year for drain tile is held to be poor, due to poor agricultural conditions last season, and the hottest, driest period of years in June and July of this year, which conditions have resulted in burned up crops, and indications of low yields, of low quality produce. Farmers are generally discouraged, and are losing heart to such an extent that it is impossible to interest them in anything.

Western Kentucky Clay Men Meet

F. C. Klutey, of Henderson, president of the Kentucky Clay Products Association, presided at a meeting of the Western Kentucky district brick and tile men at Paducah, Ky., on July 13. Secretary J. Crow Taylor, Louisville, and James T. Howington, of the Coral Ridge Clay Products Co., Louisville, were among the visitors. The meeting was an informal discussion of trade conditions and prospects.

Business Continues Dull

The Louisville (Ky.) Fire Brick Works report a few small orders of the hand to mouth variety, these orders being hardly sufficient to keep the two plants in Kentucky going two days a week. J. H. Bell, sales manager, stated that business was about as dull as he had ever seen it. Present business is all on small orders, all old contracts having been cleaned up or cancelled long ago. President K. P. Grahn sailed from New York on July 15, for a visit to Europe of several months.

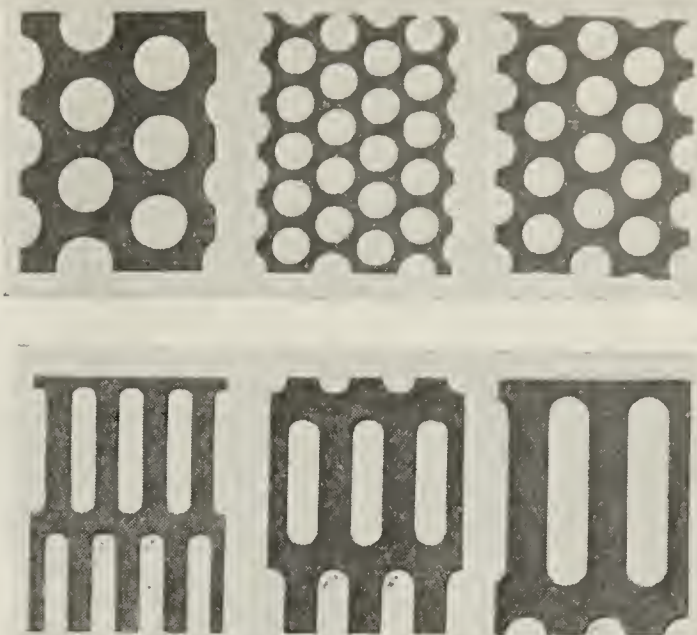
Boston Brick Now \$17

Competition is keen among brick manufacturers and dealers in Boston with the price generally quoted being \$17 per thousand delivered on the job. Dealers are optimistic and look for improved demand by early fall as the result of the settling of many labor disputes in nearby cities and towns and the gradual resumption of building operations which is noted on every side.

To Use Michigan Brick in Java Hotel

C. B. Elwood of the Watts-Moreland Co., Jackson, Mich., recently sent some sample brick to C. W. Koch at Batavia, Java. Mr. Koch, while in Jackson last year consulting engineers regarding a hotel to be built in Java, was very much struck with the beauty of the brick used in the fireplace in the home of Mr. Elwood and decided to have samples shipped to Java. Mr. Koch and his associates are so much pleased with the brick that they are determined to use them regardless of what the cost of shipping will be. The freight charges will be quite a considerable item and will run the cost from \$40, which is the price at Jackson, to \$300 f. o. b. Batavia, Java.

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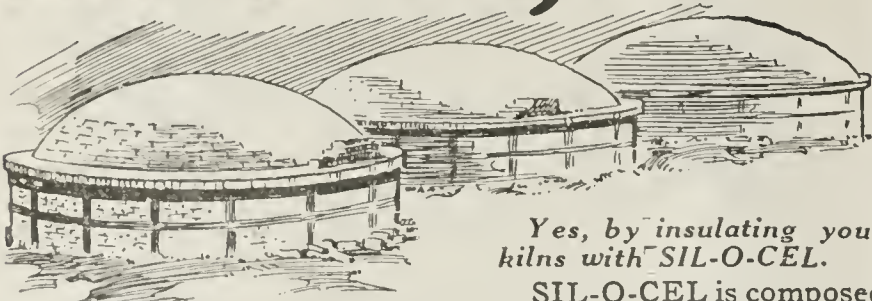
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Grinder.

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for Brick Making**

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Kalamazoo Concern Buys Indiana Company

The Kalamazoo (Mich.) Clay Co. has recently purchased the property of the Carbon (Ind.) Mining Co. which has been mining coal at Carbon by stripping it during the past five years. A little over a year ago this company started building a tile plant. They put up some buildings, a dryer and two kilns and installed a small brick machine. Due to the high cost of building at that time work was discontinued and the plant lay idle for six or eight months and then, when the slump in business came, it was decided not to go ahead with the project, and the entire property was sold to the Kalamazoo Clay Co.

The Kalamazoo Clay Co. at the present time is building three additional kilns, these being thirty-two feet in diameter, and this will make the plant a five kiln establishment. These kilns will be finished in a month or two, and will be operated this winter and spring and by next summer the company expects to build five additional kilns, making it a ten kiln plant.

All the latest machinery for manufacturing hollow building tile is being installed and the plant will specialize on a high class glazed and silo block. A producer gas system for burning, drying and the boiler is also being installed. The clay will be obtained by stripping and hauled to the plant by a small gasoline locomotive.

The entire output of the plant has already been contracted for and good business is anticipated. The Kalamazoo Clay Co. is owned by the same interests as the Kalamazoo Tank & Silo Co.

Buys Dexter Brick & Tile Co.

The Citizens Bank of Dexter, Mo. has announced the sale of the Dexter Brick & Tile Co. to the Post Brothers Tile Co., of Commerce, Mo. The Post Brothers Tile Co., will continue to operate the plant at Dexter.

Ships Fire Brick to Manila

The A. P. Green Fire Brick Co., of Mexico, Mo., has just established a long-distance record for shipment of some of its products by filling an order for five carloads of fire brick for delivery to Manila, Philippine Islands. The brick will be used in an electric light plant that lights Manila. The brick will cross the Pacific Ocean on the steamer Abercos, which will sail from Portland, Ore., late in July.

Fire Brick Company Starts Work

The plant of the Fulton (Mo.) Fire Brick Co. in this city has been reopened after being closed down for a month because of a shortage of orders. It was announced at the factory that the plant would be in operation at least a month and that it is possible that operations would continue for an indefinite period if orders continue to come in.

The biggest part of the plant's production consists of fire brick linings for locomotives. Orders for these goods have been received right along but they were filled from stock that had accumulated after the men were kept at work in the hope that business would become normal. Finally the stock became so large that the shutdown was inevitable. This stock now has been reduced to a point where it has become necessary to replenish it. Three hundred men are employed by the plant and resumption of work there means much to the business interests of the city.

The company also is putting out zone linings for cement plants in the western part of the United States and orders for these are being filled on a small scale. The plant has never shut down in its shipping department and even while the factory was closed was shipping from fifty to sixty carloads of finished product a month.

Refractories Plant Opens at Capacity

The plant of the Farber (Mo.) Fire Brick Co. has resumed operations after a shutdown for repairs. Officials of the company report that the plant will operate at full capacity and that sufficient orders are in sight to keep it going for some time. The improvements will enable the factory to put out a larger production of improved brick. The company produces high-grade fire brick and clays and maintains an office in the Chemical Building in St. Louis.

Planning to Erect Plant in North Carolina

The Canton (N. C.) Brick & Fireproofing Co. is planning for the erection of a new plant in the vicinity of Midvale, N. C.

To Increase Plant Output

James E. Rector, 8 Technical Building, Asheville, N. C., operating the plant of the Asheville (N. C.) Shale Brick Co., under lease, is planning for the installation of new equipment at the plant for increased capacity. New drying apparatus will be placed in service. It is planned to increase the output to about 25,000 brick per day.

Starts Making Tile

Miller and Bevard of Toledo, Ohio, new owners of the Bloomdale (Ohio) Tile and Brick factory, have begun making tile it is announced by officials of the company.

Shuts Down Temporarily

The Crown plant of the Robinson Clay Product Co., at Parral, Ohio, has closed down temporarily, but will resume operations again next week.

Will Equip Plant for Tile Manufacture

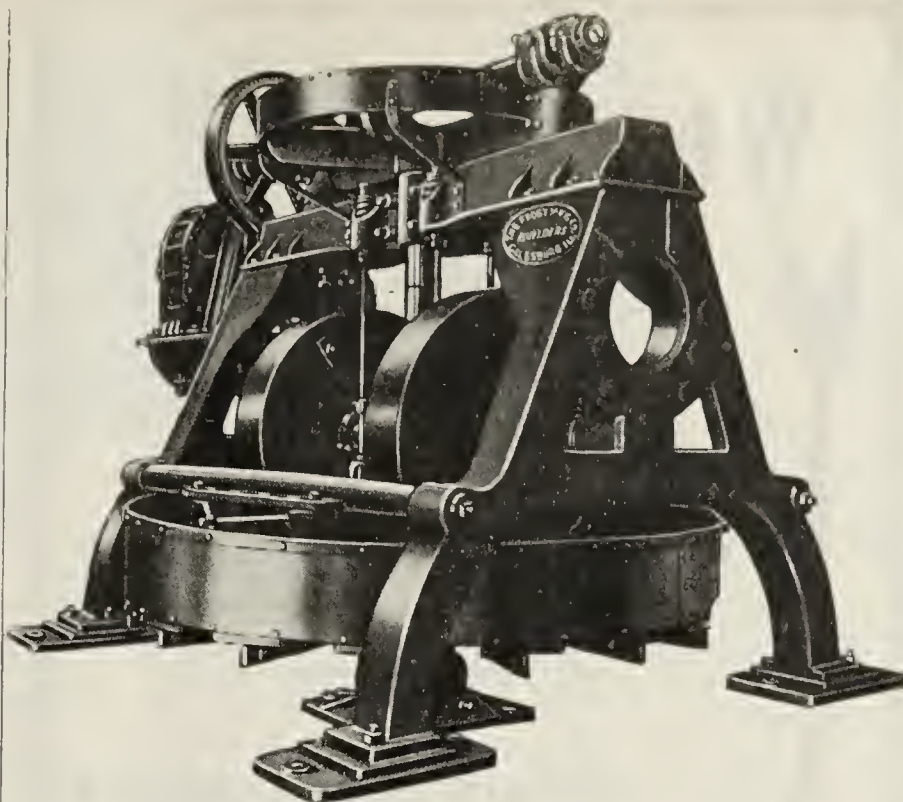
Chas. A. Simons recently secured the plant of the old National Roofing Tile Co. at Lima, Ohio, which he expects to remodel for the manufacture of hollow building block and face brick. It is proposed to install clay gathering apparatus, dry and wet pans and brick machines. Mr. Simons was formerly manager of the A. F. Smith Co., New Brighton, Pa. The new plant will be operated under the name of the Ohio Fire-Proofing Co.

Franklin Brick Making Backup Tile

The Franklin Brick & Tile Co., of Columbus, Ohio, which recently completed a new plant at Taylor Station, east of Columbus, which is known as No. 2 plant, is now running backup tile. The concern is making 4x5x12 and 5x8x12 tiles at this plant. The other plant is being operated on common and face brick. The company is also making some drain tile from time to time, but the demand for drain tile is not very good and not a great many are required to take care of the demand. Both of the company's plants are being operated with a full force of workmen.

May Build Plant in Springfield, Ohio

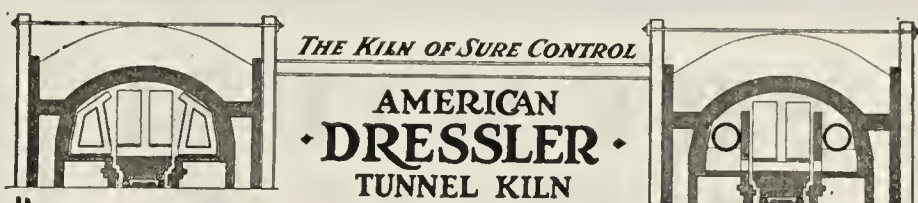
There is a tentative move on hand to conduct an investigation regarding the advisability of locating a brick plant in Springfield, Ohio. Tests are now going forward, and if it is proved that clay can be found in that district in large quantities sufficiently free from limestone, there are good prospects that a brick manufacturing plant may be established in Springfield in the very near future. The theory is advanced that the disadvantage of limestone formation in the clay can be overcome by pulverizing the clay and distributing the limestone thruout the brick.



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by the use of **O'Gara
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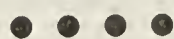
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SERVICE AND QUALITY

Building Steel Trestle

The National Fireproofing Co., Canton, Ohio, will discontinue operations August 1, to resume in a month or so, after a new steel trestle has been built there at an approximate cost of \$8,000.

Paving Brick Enjoy Fair Demand

M. M. Morrow, sales manager of the Hocking Valley Brick Co., and the Nelsonville (Ohio) Brick Co., reports a pretty fair demand for pavers, as there is considerable public improvement going forward. The demand for hollow building tile is not active however. The company, which operates four plants in the Hocking Valley field, has two closed down. The plant of the Ohio Fireproofing Co., at Nelsonville, and one of the plants of the Nelsonville Brick Co., at the same place, have been closed down.

Demand for Common Brick Continues

The price of common brick is still coming down in central Ohio territory. While the decline is not as rapid as formerly, still some recessions were noted during the past fortnight. Common brick delivered on the job sell at \$15 to \$18. Sand mold brick are the cheaper as compared with shale brick. There is still a rather good demand for common brick in Columbus and immediate vicinity. The capacity of the common brick plants in Columbus is about 85,000 daily. One of the concerns does considerable shipping and it is believed that the consumption of common brick in Columbus amounts to about 50,000 daily.

Ohio Paving Program Rapidly Proceeding

The Ohio Highway Commission is now expending more than \$1,000,000 weekly in its highway improvement and maintenance work. For work done between June 15 and July 1 vouchers were issued by the department for \$2,461,504.83, which is the largest amount ever expended in that length of time. One of the reasons for the large amount is the fact that there was practically no rain to interfere with the work. The Ohio Highway Commission will open bids July 22 for approximately \$5,000,000 work in about thirty-five counties of the state. A number of the jobs are specified for brick paving and others have brick as an alternate.

Coal Market Shows Signs of Strengthening

There is a slight increase in the demand for lump and large sizes of coal shown in Columbus, Ohio, and the Hocking Valley district during the past fortnight. This is due to better buying on the part of dealers who are stocking up. The increased demand has not been reflected on prices to any extent and quotations still range around \$2.75 to \$3.25 for lump and egg. Production has not shown much increase and is at a rather low ebb. In West Virginia lump coal is showing more strength as there is a fair demand from many localities. Operators and jobbers believe that there will be a gradual expansion in the market from this time on.

Cleveland Again Facing Building Tieup

Whether another partial building tieup will be seen in Cleveland, Ohio, during the week beginning July 25 probably will depend upon the ability of carpenter contractor members of the Building Trades Employers' Association to replace present union carpenters. A lockout on that date will be declared against union carpenters, officials of the employers declare, as a result of the strike of a group of carpenters on certain Cleveland building jobs, who object to a decision of the board of jurisdictional awards of the American Federation of Labor.

This board awarded the metal work in building to metal workers, not to carpenters, who contend they have the right to do the interior trim, and also that they were not represented when the board made its award. About 8,000 union carpenters are said to be affected by the impending lockout, according to employers' officials. Union leaders declare only 150 men will be affected.

Operating Steadily at Capacity

J. W. Wilson, of the Shale Brick Co., of Columbus, Ohio, which operates a common brick plant on Seventeenth Avenue, reports operations going on about as usual. The capacity of the plant is 25,000 daily which is being reached almost every day. A number of minor improvements are being made to the plant to increase its efficiency.

Workers Demand Recognition of Union

A strike at the plants of the Central Refractories Co., located at New Lexington and Shawnee, Ohio, has been in progress for some time. The men employed at the New Lexington plant went out on a strike about a month ago demanding recognition of the union. The men employed at Shawnee went out in sympathy, altho other plants in the Shawnee district are in operation. No efforts have been made to settle the strike.

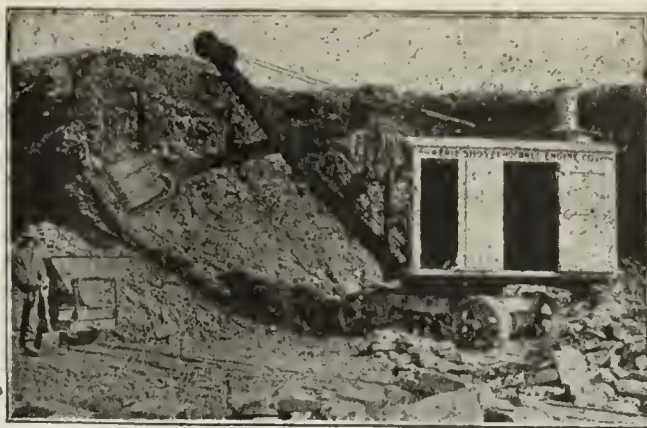
Expect Wages To Hit 25 Cent Mark

A prediction that the wages of laborers at clay plants would drop to twenty-five cents an hour was made by a prominent clay operator of the Strasburg field in western Ohio. Only one of the plants in this field, a firebrick plant is now operating on full time. It will be closed down August 1 while a new steel trestle is being built. Laborers at this plant have been getting thirty-five cents an hour. Two of the plants of one concern and one plant of another have been idle for several weeks. Another plant manufacturing fire brick and tile went on a three-day-a-week schedule last week.

Central Ohio Building Activity Increases

Building operations in Columbus and central Ohio territory are holding up fairly well under the circumstances. While July and August are usually somewhat dull, this year there is not much let-up and a number of projects are going forward. Schools appear to be the best feature of building in central Ohio. Contracts have been awarded recently for two large high schools at Xenia, a school at Bexley, suburb of Columbus, several schools at Springfield, a building at Wadsworth and a number of smaller structures in many localities. Plans are going forward for two large grade schools in Columbus on which the contracts will probably be awarded this fall. They are located on Poplar Avenue and in Clintonville, a recently annexed suburb. Four large high school buildings to cost about \$1,000,000 each are on the program for the year 1922 and plans for these structures are now being worked out. In addition a home for the infirm deaf and dumb at Central College, near Columbus, will be erected. Several structures on the campus of the Ohio State University are being considered and contracts will probably be awarded in the fall. One of the largest pieces of work is the erection of a \$650,000 hotel building at Middletown for which bids were opened recently, altho the contract has not yet been awarded. It is a sure go, however, according to J. M. Iseminger, president of the Middletown Hotel Co. The F. & R. Lazarus Co., of Columbus, is erecting a large addition to its store building at Town and High Streets.

Secretary German, of the Ohio Building Department, for the first half of July, shows that a total of 180 permits has been issued for structures estimated to cost \$440,000 as com-



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“THE cost of excavating our clay with the ERIE Shovel shows a material saving over our former method. Our ERIE is giving extra satisfaction, the repairs for a year being absolutely nothing.”—
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Make a careful comparison of steam shovels, and you will know which is the shovel to buy.

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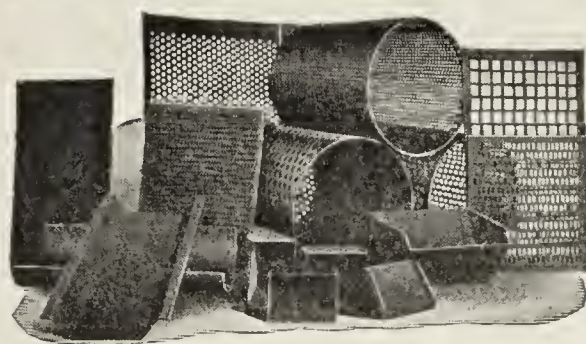
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CoKal Stoker Corporation,
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Gentlemen:—

We have installed one of your CoKal Stokers and are more than pleased with same.

Before we installed the stoker we used 3 or 4 dump wagon loads of coal in 24 hours, now we only use about 4 cart loads, which is a saving of one-third of the coal. Not only does it take less coal but it burns the coal entirely up. So there is nothing wasted.

This stoker **PAID FOR ITSELF** in a very short time in what it saved in fuel.

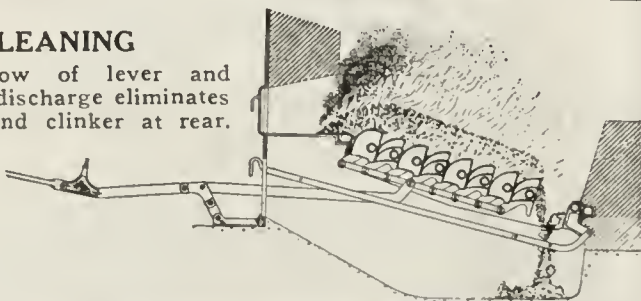
Yours truly,
TRENT BRICK COMPANY,
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CLEANING

Full throw of lever and auxiliary discharge eliminates all ash and clinker at rear.



pared with a total of \$630,515 for the whole of July last year. This indicates that July will be considerably in excess of the corresponding month last year.

Clarion Company Changes Name

The Clarion (Pa.) Brick & Tile Co. has filed notice of a change in the name of the corporation to the Clarion Refractories.

Will Build Hundreds of Homes

The housing corporation organized by the Chamber of Commerce of Pittsburgh, Pa., announces that more than 200 houses have been contracted for and that several hundred applications are on file. The houses contracted for, it is stated, are for large corporations. The housing corporation will open a suite of offices in the near future to handle its projects with more facility.

Pittsburgh Building Situation Looks Brighter

The building situation in the Pittsburgh Pa., district gives indications of improvement. In some of the outlying towns several of the building trades unions have settled their differences with the master builders and have returned to work. In other places conferences have been arranged between the opposing parties and it is expected that a basis for settlement will be established.

Organizing Tennessee Concern

The Southern Brick Co., Bristol, Tenn., is being organized with a capital of \$90,000, to manufacture brick, tile and other burned clay products. The company is headed by Charles T. Kilgore, Bristol.

West Virginia to Have a New Plant

The Coal Grove Brick & Tile Co., Huntington, W. Va., has been incorporated with a capital of \$100,000, to manufacture brick, tile and affiliated burned clay products. The company is headed by T. E. Jeffries, Huntington; and J. W. Lowry, Ironton, Ohio.

Will Rebuild Plant Destroyed by Fire

The Haileybury (Ont.) Brick & Tile Co. is reported to be planning for the rebuilding of the portion of its plant destroyed by fire, June 27, with loss estimated at about \$22,000.

Don Valley Company Suffers From Heat

No firm perhaps was harder hit during the recent hot spell than the Don Valley Brick Works, Toronto. It is located in one of the hottest districts and the men were subjected to the extreme heat from the kilns. It was 99 degrees in the shade. Many horses collapsed and were taken to cool places. Wm. Burgess, superintendent, made the work as light as possible during the hot spell.

Gets Job as Secretary-Treasurer

L. A. Smith has been appointed secretary-treasurer and manager of the Estevan Brick & Coal Co., succeeding his father, C. C. Smith, who has been ill for some time. At the regular semi-annual meeting the following officers were elected: A. E. Rice, president; T. Torgeson, vice-president, and H. C. McWilliams and E. L. Thorpe, directors.

Declares \$5 Dividend

Clayburn Co., Ltd., have re-opened the second plant at Kilgard and will manufacture sewer pipe at this plant. J. W. Ball is manager of the plants at Clayburn and Kilgard, Ont. Recently this company declared a dividend of \$5 per share, the first in fifteen years. Trade in fire and face brick has been good, shipments being made to Mexico as well as across the Pacific to Manila, China and Japan.

Entertains C. N. C. P. A. Officers at Tea

Ryland H. New, president of the Canadian National Clay Products Association, and Mrs. New treated the executives and their wives to a strawberry tea recently. They have a beautiful home at Oakville, on the Lake Ontario, the center of the strawberry growing district. A most enjoyable afternoon was spent and a hearty vote of thanks was tendered the hosts.

Purchases Site for Plant

Twelve lots were purchased from Floyd Jones, of Glenrock, Wyo., by Mr. Callahan of Cheyenne. This property was purchased for the purpose of moving a brick plant from Cheyenne to Glenrock. The site fronts the Chicago & Northwestern Railroad. The clay for the brick has been contracted from Mr. Dea, whose branch is about one mile south of Glenrock. It is understood that this new enterprise already has orders for several million brick from the Standard Oil Co. and the Mutual Oil Co. who are building refineries in Glenrock.

Refuses to Reduce Wages

John M. Bowman, general manager of the Don Valley Brick Works, Ltd., states that the price of fuel and labor makes it impossible to reduce the price of brick. Mr. Bowman said: "Labor is one of the factors to be considered if the price of brick was to drop. The other factor is fuel which is now \$8.50 a ton as compared with \$2.80 a ton in 1914. We will not reduce wages. The company has in its employ decent, hard-working men, some of them in its service for over thirty years. Sometime ago I had a conference with them on wages. After it was over I came to the conclusion that a wage cut would be inhuman. The average wage in the yards is between \$28 and \$30 a week. With rents at the present high figure, it is hard for the employes to make ends meet."

* * *

The Building Situation in the East

(Continued from page 121)

Brick market for the past fortnight, with a decided tightening in the \$15 per thousand price level in wholesale quantities, alongside dock, for the first grade material. An advance at an early date would not come as totally unexpected. Off-grade material is being sold a shade lower, or at about \$14, and is finding a fair market. Second-hand material is well established at \$45 for a load of 3,000, delivered on the job.

Arrivals from the Hudson River yards are now averaging slightly over thirty barge loads a week, and practically this entire amount is being absorbed under local distribution. The heaviest shipments continue to move to Brooklyn, with New Jersey taking fair-sized allotments.

FACE BRICK PRICES UNCHANGED

Face brick shows no change in price levels. From \$45 to \$55 a thousand is the popular figure, with grays and buffs in best call. Interior partition tile continues to hold its own without price change, two and three in. being quoted at \$180 a thousand sq. ft., with 4x12x12 in., selling for \$200, and 8 in., at \$280.

Fire brick persists in an effort to inspire greater call at a price of around \$70 per thousand, but the curtailment in this connection is continuing, and is likely to do so thruout the summer season, particularly as local industrial work is quiet.

CONSTRUCTION CONTINUES WELL IN NEW JERSEY

New Jersey continues to expand in construction work, and each month is showing better totals. Operations are



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Coal that is high in heat producing capacity, and low in ash.

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No. 2 Keys, Ill.
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No. 3 Auburn, Ill.

No. 4 Athens, Ill.

No. 5 Selbytown, Ill.

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Located in the heart of Ohio's clay products territory, we are ready to give you prompt and efficient service based on years of experience, on short notice.

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Coal and Clay Cars

that give perfect satisfaction, because they are built right—of the best material.

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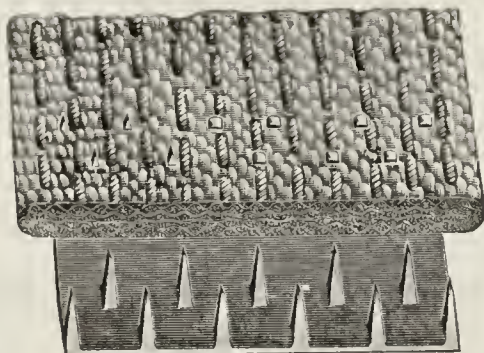
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Brick and Clay Record

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Chicago

being concentrated upon apartment and house erection, and industrial work has become practically a thing of the past.

Thruout the northern part of the state, housing developments continue, and with a fairly good labor situation, the outlook for the summer and fall is decidedly encouraging for this character of work. Newark is taking the lead over other cities and is going "to it" with a vim, particularly in the line of multi-family dwellings.

The month of June at Newark shows totals of \$2,316,431 covered by 441 building permits, as against \$1,238,595 for the corresponding month of a year ago. This is an increase of \$1,077,836, or practically double the 1920 month. An aggregate of seventy-one permits were issued for new dwellings, of which a goodly number were of brick or other fireproof material. The housing work represents an amount of \$1,184,500, as compared with a figure of \$190,000 for factory operations during the month. It is interesting to note that in the total outlay, an expenditure of \$1,317,249 was made for structures of brick or other fireproof material.

Trenton shows a total of \$149,731 for construction operations during the month of June, as compared with an amount of \$430,453 in the same month of last year.

LOWER WAGES AT TRENTON

The labor situation in the construction field at Trenton has been cleared by the decision of Martin P. Devlin, acting as arbiter in the controversy between the employers and the men. The wages of all trades in the industry, with the exception of the tile setters, carpenters and metal lathers, are reduced from fifty cents to \$2 a day. Bricklayers in the future will receive \$9 instead of \$10. The new rates became effective on July 18.

Prices in the Trenton and Hackensack districts are quite well stabilized at \$18 to \$19 at the kiln, and a \$22 and \$23 figure for delivery on the job. Newark dealers are asking from \$21 to \$23, with a shade higher prevailing at Morrison and other places nearby. Trenton figures are close to \$22.

Fire brick has reached a \$70 level at Newark, but \$75 is the prevailing quotation for first grade material at Trenton. Face brick prices show no change, varying from \$40 to \$60, according to selection.

IMPROVED SITUATION IN PHILADELPHIA

That the construction situation is improving in Philadelphia, despite the prolonged and existing strike of workers, is shown by the June figures of the local building department. In this month plans were filed for operations totaling \$4,587,395, as compared with \$6,743,015 for the corresponding month of a year ago. The character of work indicates a revival of housing operations, so badly needed, in this section, with over \$800,000 in valuation devoted to new dwellings. The June totals are about 25 per cent, in excess of those recorded for May.

The first six months of the present year shows a loss of \$21,921,235 in construction work at Philadelphia, as compared with the corresponding period of 1920. The estimated amount of construction for the period in the present year is \$16,617,010, according to plans filed at the building department; in this same time last year, the aggregate stood at \$38,538,245.

MARKET FEATURELESS

The building material market at Philadelphia is featureless. Prices are holding well, and dealers are in position to supply all current demands for materials. Brick producers, as well, are carrying good stocks, and far more than sufficient for immediate call.

Common brick continues at \$20; face brick is striking from \$45 to \$50 as the popular note, with Colonials lower. Fire brick is holding to levels at \$70 and \$75 for No. 1 grade.

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

Gallagher Bros.

Gallagher Bros., of Uhrichsville, Ohio, need no introduction to clay products manufacturers who are located in southeastern Ohio.

For ten years, this concern has been rendering a real service in that locality by furnishing and installing kiln bands and building clay cars.

Now they are prepared to extend this service and all readers of "Brick and Clay Record" who are interested in the purchase of cars, or kiln bands are invited to write.

They also make a specialty of oxy-acetylene welding.

* * *

Don't Worry—

The hot weather we have all been enjoying (?) makes fans a very timely subject.

The Garden City Fan Company, Chicago, manufacture fans that have established a reputation for durability and low cost of operation where installed in clay products plants.

And the general satisfaction with which they operate in waste heat plants relieves the clay ware manufacturer of worry, and insures more thoro drying.

Sectional catalog No. 20 contains detailed information about these fans and is yours for the asking.

* * *

New Link-Belt Steel Chain Data Book

The Link-Belt Company of Chicago, Indianapolis, and Philadelphia have just issued a new Steel Chain Data Book No. 475. In this book is presented completely the heavier rugged steel chains used for power transmission, and also including elevating and conveying chains.

Copies can be secured by any of our readers interested in this subject by addressing the Link-Belt Company.

We quote from the foreword of this book:

"Malleable iron sprocket chains manufactured by the Link Belt Company have rendered splendid service in their field for more than forty years; but the demand for chain that will run at higher speeds and under greater loads, has been so insistent that we have developed a line of steel chains which is completely presented in this booklet for the first time.

"The line ranges from the rugged slow-speed classes to the machine finished high speed chains, but in every case the chains are accurate as to pitch, ample as to joint bearing surface, with a joint construction permitting free lubrication, and material specially selected and treated to provide strength and toughness in the side bars, and to resist wear in the joints.

"Brute strength in a chain is the cheapest quality, but service and durability can only be secured if the essential requirements above enumerated are met.

"Sprocket wheels play as important a part in the satisfactory operation of a drive as the chain itself.

"If you are looking for satisfactory operation of a chain drive, and a low maintenance cost, don't expect to get it by buying a chain from one maker and sprocket wheels from another.

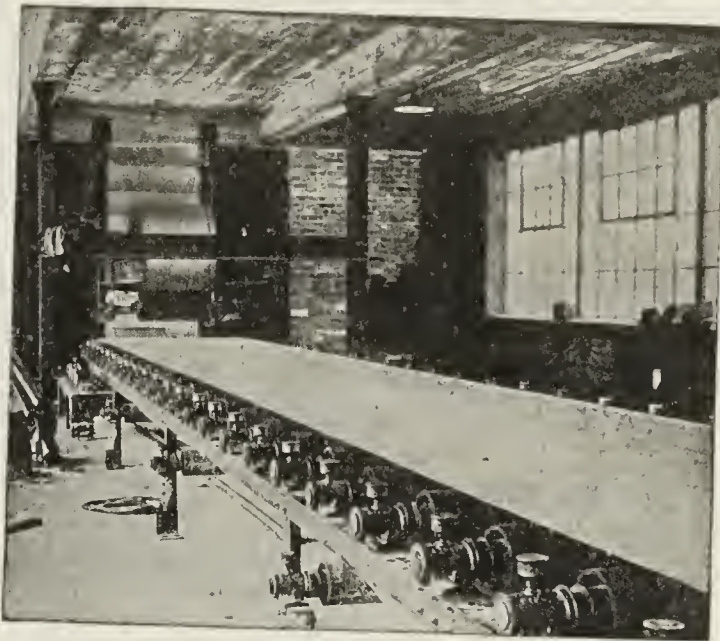
"You can do that with leather or rubber belts and pulleys, but not with chain and sprockets.

"The sprocket must fit the chain, and must be ground or machine finished to secure this fit. Money paid for a well fitting sprocket wheel yields large returns.

"Link-Belt Sprockets are made to fit Link-Belt Chains."

BURN MORE BRICK

TO MEET THE DEMAND THAT IS SURE TO COME EQUIP YOUR PLANT WITH WELLER MADE MACHINERY TO HANDLE THE RAW MATERIALS AND FINISHED PRODUCTS MECHANICALLY. OUR ENGINEERS ARE AT YOUR SERVICE TO ASSIST IN THE SELECTION OF EQUIPMENT TO MEET YOUR REQUIREMENTS.



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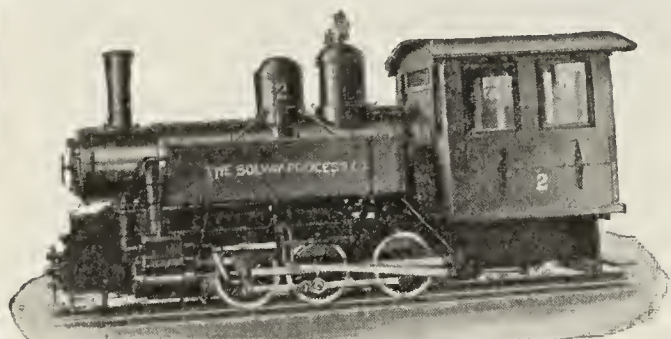


Pittsburgh
Salt Lake City
San Francisco

Brick and Clay Record Buyers' Directory of Manufacturers of Machinery, Equipment and Supplies

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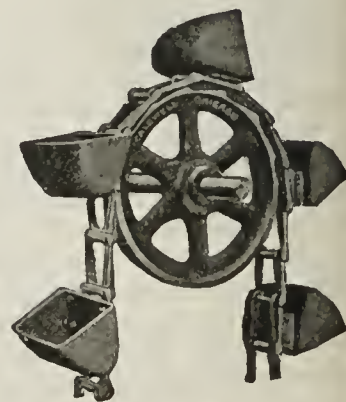
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The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

RENEWED ACTIVITY WILL FOLLOW BUILDING CLEAN-UP

HOW MANY of us, have noticed the analogy between the 1921 building situation and the life insurance scandal unearthed by the relentless Tom Lawson fifteen years ago? That was a deep-seated rottenness from which Lawson's wand brought a stench that gassed insurance high lights from one end of the country to the other.

It was then the term "muck-raking" was coined, and there were countless people who foresaw the dire ruin of many life insurance companies, and the loss of millions of the people's savings. But—nothing of this sort happened. Our states passed new legislation, most of which was sane; the life insurance companies changed their methods and began to serve the public rather than a favored few.

And—today life insurance rates are lower; the companies are financially stronger; the entire industry is better for the cleaning up that Tom Lawson started.

Now—can't you see what is ahead of the Building Industry? Can't you picture the good that will come from the cleaning of the Aegean Stables of New York, Buffalo, Chicago and other cities? Why sure you can.

All over the country today there is a whole-souled voluntary movement to play the game square. In fact, the great majority of offenders were such only because they were tied to a system which as individuals they could not change. Great good is coming from these investigations, even tho it has taken most of the 1921 building season to complete the clean-up.

There are signs right now that point to renewed confidence in the building industry on the part of all factors: Labor leaders are condemning the grafters and are accepting wage scale reductions; the big money lending institutions are making millions available for building loans; architects are bringing out plans they have held back in their clients' interests, until the cloud passed.

CONFIDENCE—that is the magic word that has been needed, and which all elements have been regaining in one another. And this confidence will bring about an unprecedented volume of

building activity. In many sections this activity will start this fall and continue well into the winter. Nineteen hundred and twenty-two is going to be a big building year, big enough to make every hustling manufacturer and dealer in the industry happy—but not so big that *anyone* can afford to sit back and wait for business. It is not too early to make definite plans to get your share of this business. This is the time to plow the ground and sow the seed.

Every day we are getting more evidence that clay products manufacturing plants are being put in condition to take care of the large volume of business that will come to them with increased building activities. Many new plants are under construction or contemplated. Everywhere we see signs of a return to a normal condition of prosperity.

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INCREASING BUSINESS THRU INCREASED SELLING EFFORTS

PROBABLY the biggest problem confronting every clay products manufacturer today, and every other business man for that matter, is that of increasing his sales. It is a very serious problem also, inasmuch as the solution of it will decide the status of the profit and loss account of the company.

As it has been repeatedly said, the day of the order-taker is past and only a real salesman can survive. Many a salesman who, a year ago, was considered a star and turning big orders in to his firm periodically is now either a clerk or hunting a position. It is evident then, that in order to obtain the same results which were obtained a year or more ago we must increase our selling efforts.

In respect to selling there are several branches of the clay products industry which are in a slightly different position than many other businesses. Manufacturers of building materials especially have a different sort of problem to solve. They cannot accomplish a great deal by increasing their staff of salesmen, but must pursue other methods.

Every modern business man knows the value of keeping his product, and the name which stands for his product, constantly before the eyes of the pub-

lie. There is but one way to do this—advertise. "But," you say, "Business is dull. I cannot afford to advertise." It would be more correct to say that you cannot afford not to advertise because business is poor. When times are good you are getting your share without much effort, it is in bad times that you must fight so much harder to get a legitimate share of the business.

It takes courage and faith to spend money when there is little coming in, but money spent in advertising—judicious advertising—is an investment which will pay good dividends.

The various associations in the clay industry are making plans for bigger and more extensive advertising campaigns than ever before. State associations and many individuals who have never done so before, are actually starting campaigns. It has recently come to our attention that nine Ontario, Can., manufacturers of drain tile, hollow building tile and brick have joined together and formed an association to advertise their products, known by the name of "Guaranteed Claycraft."

The value of advertising is twofold. It brings the advertiser a greater share of the business going on than he would otherwise receive, and it helps to create new business thru the power of suggestion. If any farmer in Ontario decides to tile his land it is almost certain that he will purchase "Guaranteed Claycraft" drain tile, because that is the tile he knows something about.

There is an editorial in this issue calling attention to the fact that the clay products manufacturer should be prepared to meet the revival in business which is coming soon. It is no less important for him to prepare the way to more sales thru advertising than it is to prepare the way to greater production thru the acquisition of efficient equipment. When good times come we will all get our share of the business, but the manufacturer who works during hard times will hasten the arrival of prosperity for his own plant.

* * *

TO ENLARGE PAVING OPERATIONS.

IN ANOTHER PART of this issue we give a summary of a letter and accompanying report from Herbert Hoover, Secretary of Commerce, ad-

vocating the letting of contracts for road improvements in the fall of the year instead of waiting until the following spring. This practice has been followed successfully in some states in the past and its general adoption should accrue to the benefit of the manufacturer of paving brick, and in fact ought to afford a distinct advantage over a concrete road. One of the biggest gains would be that the contractor could order out his material during the winter and have most of it stored before actual construction operations are started in the spring. The manufacturer of paving brick by this method could ship a large part of his winter production, instead of storing it to be picked up and handled again later when cars will be harder to obtain and there will be more demand for labor. Paving brick can be stored by a contractor in the open, but very few contractors are equipped to store cement for long periods at or near the jobs.

The elimination of one handling of the brick and the reduction in the carrying interest will enable the manufacturer to show the same profit at a small reduction in price. This reduction added to the larger operations possible ought to enable the contractor to make a decided bid in favor of brick wherever bids are asked for, on both concrete and brick surfaces. The report under discussion advocates that contracts be written so that payment for material can be made when it is delivered on the job.

The report shows that approximately thirty per cent. more construction is possible if the suggestion is adopted, and naturally brick should and no doubt will receive its share of this increase. Paving brick men should therefore follow up Mr. Hoover's letter of suggestion in their respective states. The benefits this coming winter may not be as large as they should be but if the practice is found beneficial at this time, it may be enlarged considerably in the future to include all municipal paving also.

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EXHIBIT AT COUNTY FAIRS

STATE and county fairs will soon be at hand and preparations are now being made for exhibitions on the various fair grounds, found in almost every county of nearly every state. The season of the country fair is one of the biggest events of the year in

farming districts. No other event commands as much attention and enthusiasm.

The county fair which is both educational and entertaining, appeals especially to the farmer. It is here that he usually becomes first familiar with the works and demonstration of a new type of farm equipment. There is perhaps no better place for educational work for county folk than at the county fair.

In the past there have been several fairs where clay products formed part of the exhibit. However, the number has been all too few. Much interest has been taken this year in the matter of permanent home building expositions in the larger cities. It seems that the fundamentals of such a scheme might effectively be applied in the case of county fairs.

Manufacturers of materials, together with the local building supply dealer should consider the value of erecting on the fair grounds, representative buildings including farm structures and homes. Thru cooperation with other manufacturers and dealers, it may be possible to equip these buildings with their respective apparatus, including home furnishings for the house. Such a proposition should not only prove an incentive for the farmer to visit the annual fair but should be of considerable practical value if it can be managed.

The opportunity at the county fair to get in direct contact with a large number of persons at a time when most of them are at leisure and in a mood for being demonstrated, is an excellent one. Clay product manufacturers have in several instances where they have made wholehearted attempts to secure publicity for their ware by the use of exhibits at fairs, found it very profitable. Why not a cooperative arrangement between dealers and manufacturers for an exhibit on every fair ground in the country?

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BE READY FOR THE COMING BUSINESS

"BUSINESS IS ROTTEN." There probably is no phrase which at present is more prevalent among business men of the country than this terse expression which characterizes the condition of the nation's business.

A month or six weeks ago this would

also have been entirely true when applied to the construction industry. In spite of the great need for building—small house, industrial and other construction—building material manufacturers were reporting little business, and building commissioners were granting comparatively few permits. Contracts for the clay product manufacturer were for the most part very scarce.

The situation now, however, is somewhat different than it was six weeks ago.

There is not a single branch of business in which the nation has been, and still is, more interested than construction. Every development thru the last few months—reduction in material prices, lowering of wages and a loosening up of money with a lowering of interest rates—has been followed with great interest and exactness. Magazines and newspapers, and in general the press of the country, are constantly harping on the fact that the need for construction is the nation's most vital problem.

Following developments during the last few weeks it would seem that an opening wedge has at last been driven, threatening to break down the obstinate refusal of the country to proceed with the building program. Reports from the construction centers of the country show that this industry will be the first to rise out of the mire of industrial stagnation. Advices from New York show that brick are now being absorbed by the building material market as rapidly as the brick plants can supply them, and that for the first time in the history of the New York district brick will be manufactured thruout the winter.

This condition is not peculiar alone to New York or the East. Chicago and the Central West give unmistakable signs of a general revival in building.

In view of these things it would behoove the clay manufacturer to lay aside his robe of mourning and look about him for the business which is bound to develop very soon. Much cause for hope should be seen in the present situation and the advisability of having the plant in shape to operate at the highest efficiency should be evident. We are unquestionably on the threshold of a period of active construction. Let us be prepared for it.

NO DULL HOURS DURING A. C. S. SUMMER MEETING

Large Attendance Visits Many Plants in Canton, Ohio District—Festivities Hold Pleasant Surprises for Conventioners—Approve Purdy's Appointment to Secretaryship

APPARENTLY the only laws that ceramists observe are the laws of physics and chemistry. Certainly, very little recognition was given some of our constitutional amendments when the American Ceramic Society held its summer meeting at Canton, Alliance, Sebring and East Liverpool, Ohio, on



A Group of A. C. S. Delegates. In the Background Is the Shed Housing the Continuous Kiln of the Alliance (Ohio) Clay Products Co.

July 25, 26 and 27. This summer meeting outstripped all others with regard to attendance and hospitality.

Fully one hundred and fifty persons including many ladies attended the banquet at the Congress Lake Country Club on Monday night, July 25. This was a record for the meeting and incidentally the largest attendance ever present at a summer meeting of the American Ceramic Society. It was at this function also, that the announcement was made of Mr. Purdy's appointment as full-time secretary of the Society.

The initial event on the program for the summer meeting was a visit to the Dueber-Hampton Watch Co., Canton, where was seen the manufacture of watch cases, watches and dials. The enameling of the watch dials was of particular interest inasmuch as it is a ceramic process of considerable delicacy and marvel.

After lunch the delegation visited the Bonnot Co., where the manufacture of grinding and crushing machinery was seen in the mammoth shops of this concern. An experimental grinder of hard rubber was of considerable interest to the entire group.

SEE ONE COAT ENAMELED IRON WARE

From the Bonnot Co. a street car conveyed the ceramists to the Canton Stamping and Enameling Co., where the entire process of making gray iron ware was seen. The ware is manufactured by the one-coat process and the plant is one of few

in this country that are successful in doing this. The factory is a large one and a fine grade of ware is turned out.

The evening was spent at the Congress Lake Country Club, one of the most beautiful country clubs in the section. It is a large spacious building with a terraced lawn extending from the large veranda to a beautiful lake. At this lake the club served a most delicious banquet dinner which appealed to the hungry group who had spent the major portion of the day tramping thru various plants.

Following the splendid dinner, R. T. Stull made a beautiful presentation speech for a gift to go to Professor Binns, but in presenting the beautiful glassware the boy who carried the bowl dropped it on the floor and it burst into a million pieces. The stunt was quite cleverly pulled off.

PURDY'S APPOINTMENT ELICITS APPROVAL

After this incident the announcement of Mr. Purdy's appointment as secretary was made and following an enthusiastic acclamation which indicated the hearty approval of his appointment, Mr. Purdy outlined briefly some of the duties of the permanent secretary. Among these are: to assist the officers of the divisions in planning the work and executing the tasks undertaken; assisting the various committees; to work towards the establishment of cooperative researches; to cooperate with manufacturer associations; to arrange for meetings, and so forth. In this appointment it is hoped that the Society will be better enabled to carry out the program for which it was organized twenty-two years ago, "to advance ceramic arts and sciences."



A. C. S. Quartette in Action at the No. 1 Plant of the Alliance (Ohio) Clay Products Co.

A very unique souvenir was presented to each guest at this point. A large mug containing lemonade was placed at each plate, but unfortunately no one could enjoy the refreshment due to the presence of a large number of small holes near the lip. After several unsuccessful attempts by various guests

to imbibe the fluid, during which attempt many shirts and neckties were the recipients of the liquid, a demonstration on how to drink was given by Ross C. Purdy. However, Mr. Purdy, perhaps excited over the thoughts inspired by the mug, first baptized his shirt before solving the drinking problem. The mugs, which were the gift of the Sebring Pottery Co., were decorated with the shield of the American Ceramic Society and were considered a most prized gift by each guest.



A View of the Machine Room of the New Plant of the Alliance (Ohio) Brick Co.

The remainder of the evening was spent in dancing and lounging on the cool veranda of the Country Club.

NEW FEATURES AT BRICK PLANT

On Tuesday morning the party left on special cars for Alliance, Ohio, where automobiles awaited them to transport all who attended to the No. 2 plant of the Alliance Brick Co. This plant is a new one just being completed, and has several points of considerable interest. The twelve chamber producer gas fired continuous kiln held more than ordinary interest for the ceramists. F. A. Hoiles, manager of the Alliance Brick Co., was quite busy explaining the intricacy of the operation of this kiln. Each chamber holds 68,000 brick and the operation is such that the capacity is approximately 40,000 brick a day. The design of the plant and machinery is such that a minimum amount of labor is required. Another feature of the plant is the use of a storage battery locomotive for hauling the clay car from the pit to the preliminary crusher.



The Model Plant and Beautiful Surroundings of the Homer Laughlin China Co., Newell, W. Va.

The dryer is of the radiated heat type and fired with producer gas. Waste heat from the kiln can also be used. Plate feeders feed the dry pans with crushed clay and a Fate rotary cutter is used for cutting the brick.

The Alliance Clay Products Co., which is just across the street from the above plant, also received a large number of visitors who were interested in the round down-draft kilns. This plant is operating its face brick department at one hundred per cent. capacity and is selling its full output of brick.

DINNER AT ANOTHER COUNTRY CLUB

Automobiles transferred the people to the Alliance Country Club, where a splendid dinner fortified the members for another afternoon of inspection. Following the luncheon a short business meeting was held, at which time a new by-law was read which created an "Association Membership" in the Society. This is for manufacturer associations related to the American Ceramic Society, and the dues for such a membership is stipulated at \$480 a year.

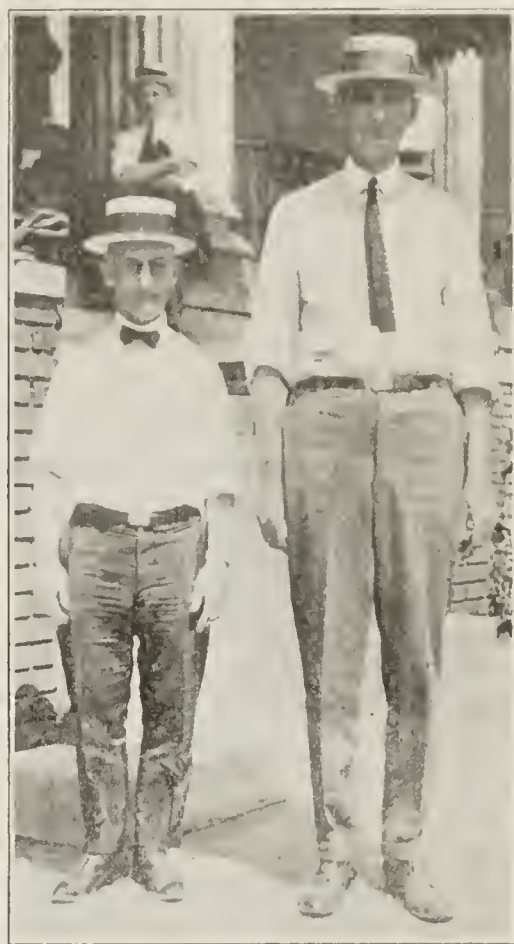
The Limoges China Co., which is located right next door to the Sebring Pottery, manufactures a very good grade of dinnerware which is well known thruout the country. Two Dressler tunnel kilns are in operation at this plant, one for bisque burning and the other for glaze burns. The decoration of the ware fascinated all delegates because of the simplicity of using decalcomania, which is simply a transfer paper applied to the ware and then burned to a moderate temperature, forming a design on the ware. The paper during this process is burned off.

ANOTHER ENAMELING PLANT VISITED

The plant of the Strong Enameling Co. is situated but a few yards from the Limoges plant and was the final plant to be inspected on Tuesday. Enameled cooking utensils and electric light reflectors seemed to be the principal products of manufacture at this establishment. The enamel industry is perhaps a little more fortunate than the clayworking industry as far as hand labor is concerned. Most of the steps in the making of cooking utensils are performed by machinery. However, the family resemblance of the ceramic industry is present inasmuch as there is considerable "grief" in the business as there is in pottery and clay products manufacture.

A special car brought the ceramists back to Canton in time for dinner. After dinner a number of diversions were indulged in. Some attended a smoker which was complimentary, while a great number visited Myers Lake, which held a diversified list of attractions for the visitors.

A very early start was made on Wednesday morning. A special car left at 7:00 A. M. and transported the delegates to East Liverpool, the pottery center of America. The trip was approximately sixty-five miles thru beautiful country and the group arrived in East Liverpool in time to enjoy a trip thru the R. Thomas & Sons Co.'s factory where the interest-



The Long and Short of the Convention. On the left, L. I. Shaw, Asst. Chief Chemist, U. S. Bureau of Mines, Washington. On the Right, Ira A. Sproat, Sebring Pottery Co., Chairman, Summer Meeting Committee.

ing processes in connection with the manufacture of high voltage insulators was witnessed. This plant held many points of interest for the ceramists.

HOMER LAUGHLIN CHINA CO. HAS MODEL PLANT

One of the exclusive features of the convention was the luncheon given at the Elks' Club, where the clayworkers were the guests of East Liverpool potters. This luncheon was more complete than the proverbial "soup to nuts" dinner in that some prewar delicacies were served to the surprised but much pleased delegation.

W. E. Wells, general manager of the Homer Laughlin China Co. gave a splendid address at this luncheon at which occasion he pointed out the difficulties of the American potter. Technical and labor problems are big ones but the potter is further harassed by foreign competitors.

VISIT WORLD'S GREATEST POTTERY

After this splendid luncheon, a trip was made across the Ohio River to Newell, W. Va., where was witnessed the manufacture of high grade dinnerware in the world's largest pottery. We are also tempted to say, the world's most modern and cleanest pottery but not having visited enough plants of this nature, we cannot make that statement. One is impressed by the "spick and span" order of all departments and the cleanliness of the factory. Undoubtedly the Homer Laughlin China Co. owes part of its success in the manufacture of high grade ware to the splendid condition of its plant, which cannot help but inspire the worker to his best efforts. The Newell plant has a capacity of thirty kilns of ware.



LIST OF THOSE PRESENT AT THE MEETING

D. F. Albery, Chicago, Ill.; Robert Bach, Chicago, Ill.; G. V. Baker, Philadelphia, Pa.; Frederick Bausch, St. Louis, Mo.; Robt. A. Bautz, Murphysboro, Ill.; Charles F. Binns, Alfred, N. Y.; A. W. Bitting, Chicago, Ill.; Mrs. A. W. Bitting, Chicago, Ill.; George J. Blackham, Pittsburgh, Pa.; A. V. Bleininger, Newell, W. Va.; Mrs. A. V. Bleininger, Newell, W. Va.; M. C. Booze, Worcester, Mass.; Davis Brown, Bucyrus, O.; Mrs. Davis Brown, Bucyrus, O.; Miss R. Brown, Bucyrus, O.; W. E. Buck, St. Louis, Mo.; A. W. Buckingham, St. Louis, Mo.; S. G. Burt, Cincinnati, O.; Rod Castro Oliveira, Alfred, N. Y.; F. C. Christy, Sebring, O.; J. L. Crawford, Pittsburgh, Pa.; E. W. Dailey, Mason City, Iowa; R. R. Danielson, Washington, D. C.; H. E. Deulele, Canton, O.; Mrs. H. E. Deulele, Canton, O.; Bert G. DeWitt, New Philadelphia, O.; R. B. Dimmick, Canton, O.; C. Dittmar, Cincinnati, O.; Earl Doane, Poplar Bluff, Mo.; Fred V. Drake, Trenton, N. J.; Oliver N. Earl, East Liverpool, O.; H. G. Elledge, Pittsburgh, Pa.; Robert S. Finney, New York City; J. H. Forsyth, Cleveland, Ohio; Paul P. Francais, Frankfort, Ind.; W. D. Freese, Sebring, Ohio; M. E. Gammon, Jr., Chicago, Ill.; M. A. Gesner, New York City; Miss M. Goodrich, Bucyrus, Ohio; Charles O. Grafton, Muncie, Ind.; C. V. Grafton, Muncie, Ind.; C. M. Graves, Clarksburg, W. Va.; R. J. Greene, Sebring, Ohio; Donald Hagar, Zanesville, Ohio; Miss Lysbeth Hamill, East Liverpool, Ohio; J. E. Hansen, Pittsburgh, Pa.; J. W. Hasburg, Chicago, Ill.; L. M. Hausmann, Detroit, Mich.; P. D. Hesler, Flint, Mich.; A. V. Henry, Columbus, O.; R. P. Herrold, Zanesville, O.; S. C. Hill, Wheeling, W. Va.; Arthur Hoiles, Alliance, Ohio; F. A. Hoiles, Alliance, Ohio; J. C. Hostetter, Corning, N. Y.; A. V. Hurxthal; M. Ichijo, New York City; Chester H. Jones, Chicago, Ill.; T. D. Keenan; R. B. Keplinger, Canton, Ohio; B. S. Kirk, New Philadelphia, Ohio; C. J. Kirk, New Castle, Pa.; H. S. Kirk, New Castle, Pa.; L. M. Kniffin, Boston, Mass.; E. K. Koos, New Cumberland, W. Va.; R. D. Landrum, Cleveland, Ohio; Mrs. R. D. Landrum, Cleveland, Ohio; G. W. Lapp, LeRoy, N. Y.; J. M. Larkins, Sebring, Ohio; W. C. Lindeman, Milwaukee, Wis.; Jacob Lindley, Tiltonsville, Ohio; S. Y. Liu, Ithaca, N. Y.; D. W. Loomis, Pittsburgh, Pa.; D. W. Loomis, Jr., Pittsburgh, Pa.; Franklin G. Lord, Lewistown, Pa.; H. E. Maddock, Trenton, N. J.; J. V. Malley, Sebring, Ohio; L. W. Manion, Canton, Ohio; Joe Mills, Sebring, Ohio; J. C. Montgomery, Sebring, Ohio; E. K. Moore, Philadelphia, Pa.; C. Nick Muessig, East Liverpool, Ohio; James Munn, Chicago, Ill.; E. S. Newcomb, New York City; George J. Nicbuhr, Newark, N. J.; F. K. Pence, Zanesville, Ohio; J. M. Powell; Ross C. Purdy and Family, Columbus, Ohio; C. C. Rand, Cleveland, Ohio; Mrs. C. C. Rand, Cleveland, Ohio; J. E. Randall, Indianapolis, Ind.; Frederick H. Rhead, Zanesville, Ohio; Mrs. Frederick H. Rhead, Zanesville, Ohio.

W. D. Richardson, Columbus, Ohio; Frank H. Riddle, Detroit, Mich.; Guy L. Rixford, Cleveland, Ohio; J. E. Robinson, Sebring, Ohio; Jos. P. Rodgers, Baltimore, Md.; V. J. Roehn, Newell, W. Va.; J. W. Sanders, Moundsville, W. Va.; Thomas H. Sant, East Liverpool, Ohio; Mrs. Thomas H. Sant, East Liverpool, Ohio; V. S. Schory, Tiffin, Ohio; C. W. Schwartz, Philadelphia, Pa.; Carl Schwier, Mansfield, Ohio; J. M. Seasholtz, Reading, Pa.; J. B. Shaw, Alfred, N. Y.; Mrs. J. B. Shaw, Alfred, N. Y.; L. I. Shaw, Washington, D. C.; Lucian Shaw, West Lafayette, Ohio; Mrs. Lucian Shaw, West Lafayette, Ohio; P. J. Sheehan,

Niles, Ohio; George Simcoe, Trenton, N. J.; Harry W. Smith, Cleveland, Ohio; H. Dan Smith, East Liverpool, Ohio; Ira E. Sproat, Sebring, Ohio; H. Spurrier, Peru, Ind.; Homer F. Staley, New York City; George A. Stanford, Sebring, Ohio; August Staudt, Perth Amboy, N. J.; F. L. Steinhoff, Chicago, Ill.; Charles H. Stone, Jr., Cleveland, Ohio; Margaret Stone, Cleveland, Ohio; R. T. Stull, Columbus, Ohio; E. C. Sullivan, Corning, N. Y.; H. C. Surls, Sebring, Ohio; E. Ward Tillotson, Pittsburgh, Pa.; Lance Turnbull, East Liverpool, Ohio; A. S. Walden, Cleveland, Ohio; Mrs. A. S. Walden, Cleveland, Ohio; A. M. Weaning; H. D. Weasor, Sebring, Ohio; W. F. Wenning, Pittsburgh, Pa.; H. G. Willetts, Pittsburgh, Pa.; A. E. Williams, Washington, D. C.; J. W. Wright, Charleroi, Pa.; M. K. Zimmerman, East Liverpool, Ohio.



Large Variation in Prices of Common Brick

The monthly report of the Common Brick Manufacturers' Association of America for July indicates that some plants are still selling at prices below the cost of manufacture. This is to be regretted as the volume of business and the highest prices existing today are only enough to pay a reasonable interest on the investment in the plant. When over-competition and price cutting are indulged in, the manufacturer is worse off than if he closed down his plant until he is able to obtain a price that would pay him a dividend.

This report shows that the price on common brick varies from \$9 to \$25 in different parts of the country. The variations in the cost of manufacture do not justify as large a difference as that. It is evident therefore that some are selling below cost. The plants that are closed, seem to be mostly plants that depend on shipping by railroad, and it is evident that freight rates are curtailing their output considerably. More brick than ever before is being delivered from plant to job by truck. The railroads will permanently lose much of this tonnage.

"There is plenty of material; labor is plentiful and fairly efficient," the report says. "The price of building brick is nowhere holding up construction. When it is considered that in all types of brick buildings, from cottages to industrial plants, the cost of the brick averages only one-tenth the cost of the job, present prices of brick cannot be an important factor. For example, a \$100,000 job will use \$10,000 worth of brick or about 650,000. A difference of \$5 a thousand would affect the total cost of the building only \$3,250, or a little more than three per cent.

"Financing still is very high. Here is an actual experience of a home builder. He borrowed \$12,000 from a building and loan company for which he paid five per cent. bonus for two years. He actually had the use of \$11,400 after the bonus was extracted. At the end of a year he had paid \$1,000 upon interest and loan and still owed the company \$11,720 or \$320 more than he ever had the use of. This is not exceptional. The high cost of money is a big factor in discouraging home building."

Those connected with this association are bending every effort to increase the demand for and use of common brick, and the results would be achieved quicker if every manufacturer of this excellent commodity would put his shoulder to the wheel and assist.



Chicago Shows Large Increase in Building

The building department of the city of Chicago issued permits for work to cost \$14,004,650 during the month of July. This is in contrast with permits for \$6,669,300 of work in July, 1920, and only \$7,484,200 of work in June, 1921.

Permits for 124 apartment houses and 510 residences were issued last month. In June a year ago there were permits for only six apartment houses and only 156 residences.

These figures indicate building conditions are slowly approaching normal, according to E. H. Nordlie, chief plan examiner for the city building department.

"The statistics for June and July this year show the peo-

ple are confident Judge Landis will settle the building trades controversy," Mr. Nordlie said. "Prices still are high, to be sure, but the people must have homes."

Comparative statistics on building in the two years follow:

	July, 1920	June, 1921	July, 1921
Factories	82	95	86
Residences	156	436	510
Apartments	6	117	124
Others	9	27	30
Total	253	675	750

Frontage	9,718 ft.	18,510 ft.	21,403 ft.
Cost	\$6,669,300	\$7,484,200	\$14,004,650

In the \$14,000,000 work authorized last month, there was only one really large job, that for a building to cost \$3,000,000.

The total value for July, 1921, shows an increase of 87 per cent. over June, 1921, and 110 per cent. over July, 1920. These figures bear out the opinions elsewhere expressed in this issue that the bulk of construction for the rest of 1921 will be the small jobs, but the totals are surprisingly large and should bring satisfaction to everyone interested.



HUDSON RIVER DISTRICT WILL MANUFACTURE THRUOUT WINTER FIRST TIME *in* HISTORY

BUILDING CONSTRUCTION reaction in the eastern section of the country is real or fictitious according to the character of building enterprise considered, is the statement of the Dow Service daily building report for August 1, 1921.

Small dwelling construction in the suburbs as well as in the outlying sections of the city is the one branch of the building business that commands the respect of the inquiring analyst. Some apartment erection, tho scattered, offers spotty trade opportunities to large-quantity sellers. Furthermore, there appears to be a tendency toward an increase in volume of this sort of building activity, probably lasting thru the winter and well into the spring of next year. Firms specializing in supplying this section of the building industry with materials and equipment are inclined to look upon reports of stagnated building activity as fancied.

On the other hand the firms catering to large-order building projects admit a reactionary tendency. Opinions in sections of the building construction industry range all the way from a thirty-five per cent. of normal building market between now and the building season of 1922, to complete standstill.

COMMERCIAL BUILDING HOLDING OFF

Present fundamental conditions in the building construction market in New York do not justify the views cherished as facts by either type of building investor. Home building is accelerated by fear of an impending turn upward in building material prices. Commercial building construction, such as office building, large apartment house, institutional, specialized or amusement building enterprises, is being retarded because of a fixed idea that building material and labor costs are going to go lower.

Large building operations are being retarded mainly because their projectors are not certain about the permanency of demand for them. Small building projects are active because their projectors know positively that they want a place in which to live. Just a little while later, when there is as strong a demand for business space as there is at present for housing space, the building construction tide will turn regardless of whether building materials are high or low or wages are up or down.

CONSTRUCTION WILL NOT STOP

The day of the turn in the type of dominant building activity is not more than a few months away. The accumulation of great hoards of gold encourages expansion. Were it not for the wide ranges in foreign exchange the trend of economic index figures would long ere this have been in a different direction.

Building construction as an industry is positively not headed for complete standstill. Even during war time when an official government ban was placed on non-essential building construction, and there was hardly enough building material on hand to supply the country's war needs, general construction never came to a complete stop. In the aggregate the year 1921 will rank for the entire country well up with the total reported for last year, which was near the peak of national constructional activity, even tho building construction costs were also at or near peak-levels.

BRICK RESERVE VERY LOW

Building material production is even now scarcely able to keep pace with demand. In New York, for example, there was not a boat load of brick in stock at the wholesale docks on July 29, and the supply of brick up the Hudson River right now, with only about one-third of the brick-making season left, is already 100,000,000 brick behind the reserve at this period last year when the market was bringing \$25 a thousand instead of \$15 wholesale, New York.

There is a significance in the further fact that a Long Island brick manufacturer cannot meet his demand at \$17.50 a thousand at manufacturing plant, and is putting in more machinery to increase his output. For the first time in Hudson River brick manufacturing history brick will be made and burned all next winter. Some building materials are still being forced down. These include plaster board, building metals, limestone and Ohio lime, but some other materials are headed upward.

BUILDING WILL PROCEED IN WINTER

The unvarnished fact is that there is and will be building construction available for both artisans and material men this autumn and winter. Any possibility of a wage reduction that will bear heavily on costs is being discounted by contracts calling for readjustment to the investor in case wages are lowered or materials drop further. As a matter of fact, there is plenty of room for speculation as to how long wages will stay down in certain trades if building should become any more active than it has been. There is a satisfying volume of business being taken right now in the building business for firms who are willing to go out and fight for it. Many firms have been content to have business handed to them. They have never before been forced to compete for building contracts, but things have changed and it is noted frequently that those who complain loudest of slackness in the building business are those who are letting business slip by them toward those who meet the new conditions.

CONTROLLING EFFICIENCY *in the* CLAY PLANT

A System Which Will Enable the Manager to Tell at Once Whether the Product is Being Produced at the Lowest Cost—Shows Efficiency of Separate Departments

By Arthur H. Kaepfel

Asst. Treasurer, Northwestern Terra Cotta Co., Chicago, Ill.

IT IS generally recognized among manufacturers that cost systems serve some useful purposes; and the reluctance or slowness with which cost finding methods are adopted is by no means due to the expense of maintaining a cost department, but to the rather prevalent feeling that the final result is not always an intelligible analysis of actual plant conditions and too often presents a mass of statistics, which no one has either the time or the inclination to study.

Cost systems seem to have a most peculiar propensity for the accumulation of detail without achieving the result which the busy executive wants, namely price and plant control in so concise a form that a glance will suffice to visualize the barometric tendencies of market and production. It is absolutely essential to the successful marketing of any commodity that the price is right with respect to "supply and demand" and actual cost.

COSTS MUST BE CORRECT

It is perhaps more, surely equally as important that production cost is at all times right. Right in the latter instance does not merely mean the cost ascertained by cost records which balance with accounting records. From the auditor's viewpoint such a test establishes the correctness of the cost records, but from the manufacturer's standpoint production cost is right only to the extent in which it varies from the normal cost established by the industry as a whole and the particular ex-

perience of each plant as a unit. In other words if the cost of manufacture in a certain plant is greater than that of competitors it is imperative to the successful conduct of the business that such excess is discovered and eliminated. The important question is—"Who is wrong?" If this plant is losing orders, or finds its bids high and competitive plants are operating on a profitable basis, it is apparent that the management must discover the cause and find means of overcoming price discrepancies. The fact that the cost is correct is by no means a safe criterion for the correctness of plant operation.

MUST KEEP IN TOUCH WITH DEPARTMENTS

Whether the plant is large or small, it is, therefore, vitally important for the management to keep in constant intimate touch with production results. That management which attempts this by keeping in constant physical touch with the functioning of the various departments in the plant is foredoomed to failure. A successful management has time only for the weighing of results and in order to fix responsibility for efficiency or failure, intelligently, correctly and justly, facts and figures must be provided which will clearly show this.

After much experimenting with reports compiled from cost statistics, the writer has evolved a monthly factory efficiency statement which places in the hands of the factory management a barometer on every production unit in the plant and makes possible a close survey and effective control of unit and

FACTORY EFFICIENCY REPORT																
				Cols. 2 & 3		Cols. 3 & 5			Cols. 7 & 8		Cols. 1 & 10	Cols. 7 & 10	Cols. 3 & 7	Cols. 1 & 2	Cols. 3 & 10	Cols. 14 & 15
DEPARTMENTS	NORMAL PRO- DUCTION IN TONS OR M.	NORMAL HOURS	HOURS WORKED	PER CENT TO NORMAL	COST OF LABOR	AVE. PER HOUR	TOTAL DEPT. COST	FAIL- URES	PER CENT TO COST	PRODUCT- ION IN TONS OR M.	PER CENT TO NORMAL	COST PER UNIT	COST PER HOUR	NORMAL HRS. PER UNIT	WORKED HRS. PER UNIT	PER CENT EFFICI- ENCY
CLAY MINING	1500	8,008	5,352	66.83	5,097.37	.95	6,889.78			939	62.60	7.35	1.29	5.34	5.70	93.69
PREFARATION	1500	9,655	6,967	71.12	4,286.46	.62	8,982.96			701	46.73	7.98	1.31	6.43	9.79	65.68
MANUFACTURING	1500	25,740	12,868	49.99	7,600.23	.59	18,269.94	483.93	2.65	701	46.73	26.06	1.42	17.16	18.35	93.51
SETTING	1500	12,870	6247	48.54	4,478.52	.73	16,108.85	65.00	0.41	952	63.46	16.91	2.58	8.58	6.56	130.79
BURNING	1500	13,937	5,974	42.15	3,312.68	.56	6,153.60	79.88	1.29	712	47.46	8.63	1.06	9.30	8.25	112.60
SHIPPING	1500	5,360	3,273	61.06	1,658.51	.50	8,531.10			815	53.33	10.46	2.60	3.57	4.00	89.25
AVERAGES OR TOTALS	1500	75,570	40,481	53.57	26,512.77	.655	64,936.23	628.81	0.97	803	50.41	77.36	10.25	50.38	52.65	95.69
COLUMNS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

plant operation as a whole. It is the opinion of the writer that the essentials of the statement hereinafter explained and illustrated can be successfully adopted in every clay products factory.

The report is termed "A Factory Efficiency Report" and serves no other purpose than that of providing the factory management from month to month with data which will make possible the closest and most rigid supervision of the operation of each plant department.

It would be well to state here that the figures used in the report illustrated here are not taken from report of actual conditions in any plant but are arbitrary and serve only as an example of how the factory efficiency report works.

MUST FIRST DETERMINE PLANT NORMAL

The bases of this report are normal production and normal conditions in the plant. It is, therefore, necessary as the first step to determine what constitutes normal in any particular plant. As you will note from the illustration, the first essential is to determine normal output or capacity (Col. 1). The next is normal time (Col. 2) required to operate the plant to produce normal output or capacity. Where cost records have been maintained over a period of years, it is a fairly simple matter to determine a normal for the various operations in the plant. Where no cost records have been kept it becomes a matter of judgment and naturally, the statement will be reliable only to the extent that normal actually reflects plant conditions. However, in either case the accuracy of a report which will make possible the control of factory efficiency will be determined after a surprisingly short period.

The first impression which the reader may receive is that the compilation of statistics necessary to arrive at a normal is a big job. However, this is by no means true. Perhaps every manufacturer is so familiar with every process and every operation in his plant, that it is a comparatively simple matter for him to establish in his own mind what the ideal, normal, capacity or standard should be. This may prove sufficient. A few months will soon disclose errors in judgment. Therefore, every manufacturer is in a position to have placed at his disposal a control report or chart, which will at all times graphically show the tendency of operating efficiency in his plant.

ARRIVING AT A STANDARD OF NORMAL

It is possible also to determine capacity output and fix a standard of time to produce this quantity. This can be done by the familiar process of "time study," in this manner arriving at a standard instead of a normal factor on which to base the efficiency of department and plant operation. While the correctness and fairness of such a standard would at the outset be problematical it can be readily seen that a few months of actual control would soon place the management in a position to demand a definite result from a certain amount of labor, or keep the labor employed down to the minimum required to produce certain results. If "Time Study" suggests difficulties then the widest latitude of judgment is permissible in order to establish a standard to begin with. This naturally will be a crude and incomplete basis at the outset, but a little patience and observation, a few months of actual trial will soon result in a fair and accurate schedule for the various operations in a plant.

Space does not permit nor is it the intention of the writer here to discuss the manner in which the statistics necessary to compile a statement such as the one here discussed might be arrived at. The procedure would necessarily vary with the varying conditions encountered in different plants. Almost every manufacturer keeps some records of output, either daily or monthly, which might serve as a basis for an estimate of normal. An analysis of the payroll may furnish the data from which to establish the normal hours required to produce a certain quantity.

DETERMINE NUMBER OF HOURS WORKED

After having determined normal hours and normal output, the next step is to secure from the cost department figures representing actual plant operation. The first thing to determine is the actual hours worked (Col. 3) in the various departments.

Where departmental costs are not kept, a simple payroll analysis must be made periodically in order to determine the actual hours worked on certain operations which are usually considered separate and distinct units. This should present no difficulties and practically no additional labor, it being simply a matter of payroll classification, except as regards inter-de-

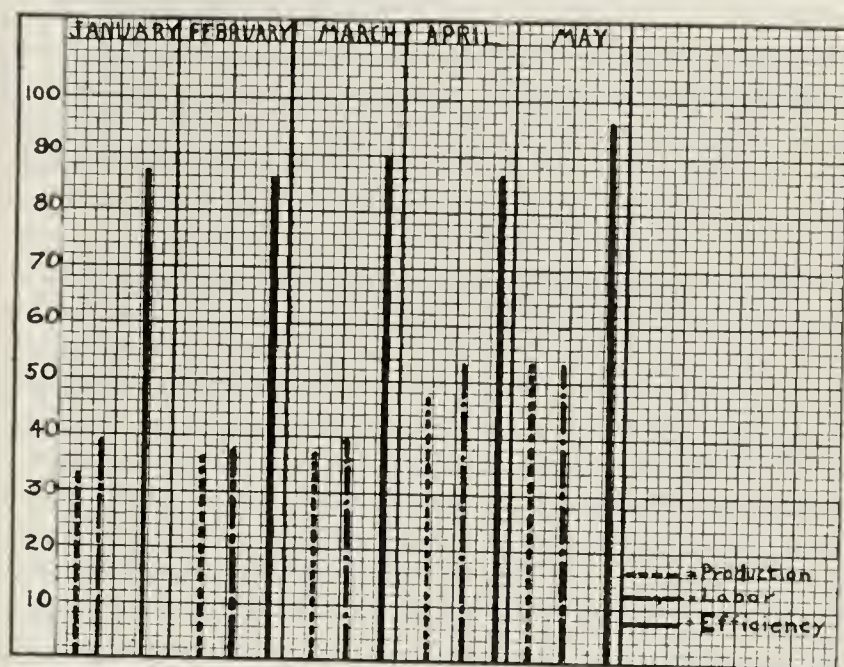


Illustration No. 2. Chart Showing Variations in Production (Dotted Line), Labor Cost (Broken Line) and Efficiency Factor (Unbroken or Solid Line).

partmental exchange of labor. The department foreman usually keeps his own record of time and may, therefore, furnish a periodic report on labor exchange or borrowed labor.

A comparison of hours worked (Col. 3) with normal hours (Col. 2) will at once determine the relationship between the two, (Col. 4) thus where normal hours are 8,008 and worked hours are 5,352 the relationship would be 66.83 per cent. or 33.17 per cent. below normal. The next thing to determine is the actual output of each department (Col. 10) and the average output of the plant. Comparison of actual output with normal output (Col. 1) will show the relationship between the two (Col. 11). Thus where normal output is 1,500 units and actual output is 939 units, the relationship is 62.6 per cent.

FINDING NORMAL HOURS PER UNIT

In order now to determine the efficiency factor, it is necessary to find again by departments the normal hours required to produce the unit output, thus: Normal hours (Col. 2) 8,008, normal output (Col. 1) 1,500, normal hours per unit 5.34. The next step is to determine the worked hours per unit, thus: Worked hours (Col. 3) 5,352, actual output (Col. 10) 939, worked hours per unit 5.7. A comparison of normal hours per unit (Col. 14) with worked hours per unit (Col. 15) shows a relationship of 93.69 per cent. (Col. 16). This percentage is the efficiency factor of the department. Taking the totals of Col. 14 and 15 the efficiency percentage of the plant as a whole may be determined.

Turning to illustration No. 1, Factory Efficiency Report, the following observations may be made:

Production in the clay mining department was 62.6 per cent. of normal, whereas the average plant production was only 50.41 per cent. This may indicate an overproduction of raw material and a consequent excessive accumulation of storage, which unless seasonable or in line with expected increasing

plant output should be checked. Turning to Col. 4 it will be noted that the labor employed compares favorably with output (Col. 10). A comparison of Col. 14 with Col. 15 also indicates efficient supervision resulting in satisfactory labor production, it requiring 5.7 units of time to produce a unit of product as compared with 5.34 required under normal conditions. This is reflected in a fairly high percentage of efficiency, namely 93.69 (Col. 16), which also compares favorably with the plant efficiency as a whole 95.69 per cent. (foot of Col. 16).

INEFFICIENCY EASILY TRACEABLE

The total operating cost for the department was \$6,889.78 (Col. 7), which was at the rate of \$7.35 per unit of output (Col. 12). A comparison of this month's unit cost with that of previous months, or with what is known to be correct for the department will assure the management of the continued economical operation of the department. If by any chance the cost per unit should be out of proportion with previous experience an analysis of the sum shown in Col. 7 will locate the very item of expense responsible for the increase.

The labor employed in the Preparation Dept. was 71.12 per cent. of normal (Col. 4), whereas the production was but 46.73 per cent. (Col. 11). This is alarming to say the least and requires instant investigation. A further glance shows the department efficiency as being only 65.68 per cent. (Col. 16) as compared with an average of 95.69 for the plant. Furthermore it has required 9.79 units of time to produce a unit of output as compared with a normal requirement of but 6.43 (Col. 14), an excess of 3.36 units of time. This means a total excess of 2,355.36 hours for a production of 701 tons, or units. Applying the department rate as shown in Col. 6, namely .62 per

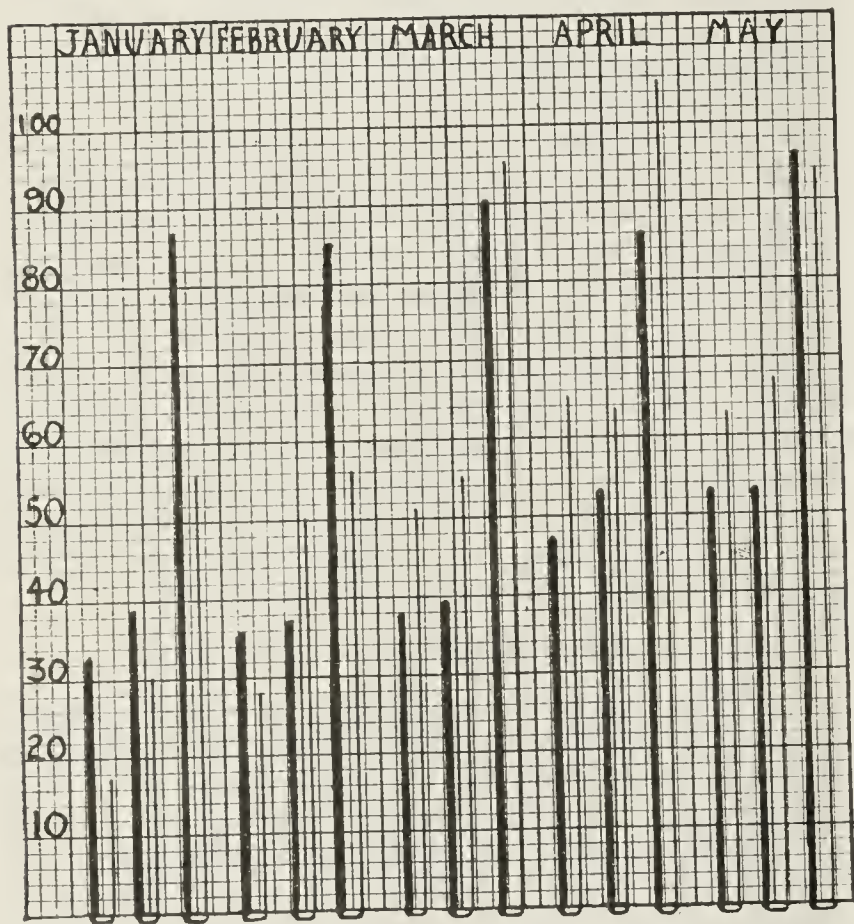


Illustration No. 3 The First Two Lines Show Percentage of Production; Second Two Percentage of Labor; Third Two Percentage of Efficiency. The Heavy Lines Show the Average Factory and the Light Lines Average Department Percentage.

hour we find an apparent labor wastage amounting to \$1,460.32 in this one department. Knowing this makes it possible for the management to ascertain the causes for high operating costs and to institute remedial measures, which will force costs down to the level established by a competitive market.

MAINTAIN EFFICIENCY AT 100

Now whether your output is normal, about normal or below normal, your efficiency factor should never drop below 100.

When the result of a certain department operation reflects less than 100, it becomes the management's duty to request an accounting from the department manager. It is not at all unlikely that a drop from 100 per cent. to 99 per cent. in the efficiency of a single department may represent an actual payroll loss of several hundred dollars. Certainly it costs *something*. Knowing where the leaks are will enable the management to determine upon an intelligent course of action to overcome all unnecessary and avoidable labor expense.

A comparison of the per cent. column of actual production to normal (Col. 11) with the per cent. column of hours worked to normal (Col. 4) will show the relationship between production and labor employed. The importance of exercising a rigid control over labor is too generally recognized among employers to require any comment, and yet it is a fact that in most plants the matter of labor required to produce a certain quantity is not a worked out problem but continues to be a matter of opinion or judgment on the part of a foreman. The foreman should requisition his required labor, or perhaps go so far as to employ it, but the management must be in a position to know that the amount of labor employed is right as compared with results produced.

LABOR THE IMPORTANT FACTOR IN COST

Once the department manager learns that an accounting will be demanded of him whenever the barometer of his department drops, he will exercise the utmost caution and greatest care in his labor expense. The economic tendency of commodity price is reflected in the cost of labor to so great an extent that the question of raw supplies in the native state has little influence on the rise and fall of actual cost. If, therefore, the manufacturer keeps as zealous a watch over his labor expense as he usually does over every other kind of expense he is influencing price tendency in every stage of commodity movement.

An example of the supervision possible with this kind of report in the management's hands is a case where a plant was operating on a seven hour day schedule and due to an increase in production from 38 per cent. to 46 per cent. of normal the schedule was changed to a nine hour day, resulting in an average labor increase from 39 per cent. to 53 per cent. of normal, thereby impairing the plant efficiency fully 5 per cent. An impairment of 5 per cent. in the plant efficiency in this particular instance resulted in a labor wastage costing over \$2,500 for the month during which the time schedule was changed. Naturally the schedule was immediately adjusted and the management cast an anxious eye on the next report to make sure the deficiency was overcome. Keeping labor in correct alignment with production and maintaining factory efficiency at a correct level is the acid test of effective plant control.

CHART SIMPLIFIES REPORT

In order to save the busy management as much time as possible it may be advisable to chart the results of the factory efficiency statement, which may be accomplished about as shown in illustration No. 2.

The dotted line indicates production, the broken line represents labor and the unbroken line reflects the efficiency factor. The scale is a percentage of normal. Ideally all lines should reach or run over the 100 per cent. line or normal. If this is not the case it should be noted that so long as the production line reaches an equal or greater height than the labor line, the efficiency line will run up to or beyond the normal or 100 per cent. line.

A glance will suffice to show the management that conditions are right so far as the whole plant is concerned. It must be remembered, however, that the plant efficiency as a whole may be fairly high still a scrutiny of each department may disclose

some gross inefficiency. It is the inefficiency which is hidden by an otherwise fairly good average result which cuts into profits. The management should, therefore, have a chart which clearly shows a comparison of department operation with average plant operation, and a correct relationship between the two must be maintained. A glance at Col. 16 of the factory efficiency report will suffice to determine the department efficiency factor as compared with the plant average, or a chart, (illustration three) drawn up in colors or with differently shaded lines may serve the same purpose. A study of illustration three shows a gradual increase in plant efficiency as a whole, starting with 86.5 per cent. in January and reaching 97.5 per cent. in May (heavy lines). The department efficiency more than keeps pace with the plant average starting with 56 per cent. (light lines) in January and reaching 103 per cent. in April, however, for some reason or other, which the management should discover, the efficiency drops to 93.5 in May during which period the plant efficiency increased 9.5 per cent. The all-important thing is to keep every unit of operation in as healthy a state as possible so as to insure maximum final results.

WATCH FAILURES CLOSELY

The illustrated factory efficiency report contains some other features of control with which the management should at all times keep in intimate touch, for instance, Col. 5, Cost of Labor and this reduced to an average cost per hour (Col. 6) in the various departments.

Perhaps no question is getting more attention right now than the question of wage adjustment. The value of knowing the exact cost of wages per hour and of keeping in close touch with wage movement is fully recognized at this time and requires no further comment.

Col. 7 contains the total cost of each department, which includes labor, materials and factory overhead.

The management should never consider an analysis of an efficiency report complete without giving considerable time to the consideration of failures. Col. 8 shows the cost of failures in the different departments, and Col. 9 shows the relationship between cost of failures and total cost. To know in a general way that failures as a whole are being kept within reasonable bounds is by no means reassuring, since the increased efficiency of one department may tend to offset gross carelessness in another department. Turning to illustration 1, Col. 9, it may be observed that the per cent. of failures in the manufacturing department is 2.65, in the setting department 0.41 and in the shipping department 1.29, now if the average of 0.97 is fair then the important thing to determine is that the relationship between the various departments is fair. In other words if the ordinary run of failures in the manufacturing department is 1.65 instead of 2.65 and the setting department ordinarily has 1.41 per cent. failures, then the gross inefficiency of the former is concealed by the increased efficiency of the latter, yet the result as a whole would not be disturbing in the least.

FAILURES IMPORTANT FACTOR IN FINAL COST

How many manufacturers really know what wastage due to failures actually costs them? Perhaps they find comfort in the thought that the overhead takes care of such expense. But the time is here when price cannot be reduced by the arbitrary slashing of labor costs and right now the tendency is downward, ever downward with bottom not yet in sight. How will industry meet this condition? Surely not by employing discontented labor at low wages. There is but one way out, namely, increased efficiency. Knowledge of what is going on in your plant and the administration of scientific plant control will keep the factory in shape to meet any condition.

It is remarkable to what degree of enthusiasm the personnel of a plant may become keyed up under a leadership that im-

presses it with the knowledge it possesses of what is going on in the plant. On the other hand it is equally true that the management which attempts such a supervision by close physical contact with men and foremen soon makes itself obnoxious and belittles itself in the eyes of the rank and file in the plant.

Cols. 12 and 13 of the Factory Efficiency Report contain unit cost and hour cost of each department. These columns serve some specific purpose in a special plant and may or may not be made a part of the report.

In conclusion let it be said that the management which earnestly purposes to manage cannot do so effectively and efficiently without the aid of statistics and where statistics are compiled it requires little effort to reduce them to a final picture which will graphically and concisely tell the story of the plant. Watchfulness and knowledge will make for greater efficiency and greater efficiency is undeniably the greatest sales force known in modern business economics.

* * *

Permanent Home Exposition Opened

Chicago's permanent home exposition opened in the Leiter Building, on State Street, from Van Buren to Congress, August 1. The immense amount of work necessary to complete the installation of the exhibits has delayed the finishing touches on some, but those that are completed together with the general decorations and the outlines of the unfinished booths clearly show that when completed the exposition will be a marvel in the information that it will afford.

The first four days a series of talks and instructions was held bearing on the small home, its plan, its financing, its furnishings, its construction, and its equipment. A part of the floor was used as a lecture hall for these talks.

The benefits to be derived from this exposition will be far reaching, because it is designed primarily as a centralized information bureau for the home builder. Practically all experts agree that the greatest need in the building line today is more homes, and at the same time reports of building permits in almost every city show that the largest percentage of increase is in home building.

* * *

Chemical Exposition to Be World's Greatest

What is said to be the greatest chemical exposition in trade history will be held in New York City September 12 to 17. The exposition is attracting world-wide attention and scientists from almost every part of the globe will be in attendance.

Four hundred exhibitors have engaged space and among the exhibits will be many which are of interest to the clay products manufacturer. Chemical and scientific porcelains will hold a place of importance. Special stress is laid on heat resistance in these wares. Dishes made from compositions which are entirely impervious to nitric, sulphuric or hydrochloric acids and casseroles perfected to meet the requirements of chemical and steam baths, will be a part of the large glass and porcelain display. Other exhibits of interest will be those showing the latest developments in automatic controlling of temperature, humidity and atmospheric conditions.

* * *

Increases Capital Stock

The capital stock of the National Brick Co., of Laprairie, Ltd., Montreal, has been increased from \$2,000,000 to \$5,000,000. Bond holders will be given preferred stock in exchange for bonds.

TRIMMING *the* SLICKERS

Last Part of a Story Begun in the July 26 Issue of This Paper—Joshua and Lemuel See the Result of Their Bargain

By Arthur G. Ruppert

ACT 2

Time: Middle of June.

Scene 1. Same as Scene 1, Act 1, with Lemuel and Joshua in the old runabout driving Jerry out to their former plant. The effect of their four months' vacation in Florida is obvious. Their clothes are snappy; their beards nattily trimmed; both wear gaudy cravats and tailored clothes. Joshua, however, still cups his right hand to his ear and sits at Lem's left side, a habit of 30 years' association.

Lemuel (*softly*): "Go 'long, Jerry." (*To Joshua*): "Seems like old times."

Joshua (*feelingly*): Makes me feel plumb queer, Lem."

Lemuel (*always the more practical*): "Makes me feel pretty good up here." (*Taps his forehead.*) "Smart deal we put over Josh."

Joshua: "A ripsnorter, Lem! But, after all, I hope them lads ain't gone broke. Wouldn't seem natural if th' old plant was down fer keeps."

At this juncture they turn the bend in the road that brings the plant into full view.

Joshua (*astounded*): "Goshallhemlock, Lem, look!"

Lemuel (*whistling between his teeth*): "Whatinth'—? I wonder what them kids is up to?"

Two huge motor trucks whiz past them carrying multitudinous tons of brick. In another moment they are at the old gateway. A new iron gate, swinging between attractive columns of brick, confronts them. Over the archway is a large sign:

HILL — QUINCY — BROWN
Member Common Brick Manufacturers Assn.
HIGH — QUALITY — BRICK

The sign is equipped with reflectolites for night illumination. The old office has disappeared. A neat brick affair, with terra cotta trimmings, and an attractive tile roof has taken its place. A brick sidewalk leads from the gateway to the office door. There is not a lumber building in sight. Prosperity, progress, permanence are in the air. The chug plug-chug-plug of gas engines is punctuated now and then with the busy rumble of falling brick. Men are seen moving alertly in the yards. From back of the office comes the whirring noise of lawn-mower blades in action. A few seconds later, old Mose noses his pet machine into view. Looking up, he sights Lemuel and Joshua. Instantly he forsakes machine and runs to office. Simultaneously, Hill approaches the office from the plant. In another moment, Hill, Quincy, Brown and Mose are at the gate with greetings. Lemuel and Joshua leap sprightly from runabout, and Mose takes charge of Jerry.

Quincy (*stepping back to survey Lemuel and Joshua in their sporty raiment*): "Class! If I saw 'em with Uncle Joe Cannon, I'd gamble they were senators!" (*Aside to Brown*): "Or first-class window-hooking confidence workers."

Lemuel (*to Hill*): "Howdidja do it? I'd never recognize th' old plant! Boy, you plumb got us upset."

Joshua (*in agreement*): "Teetotally flabbergasted, by crack! I ain't seen nothin' in Florida—nor nowheres—like this!"

Hill (*to Quincy and Brown*): "I'll take them over the plant. We'll be back in thirty minutes."

Quincy and Brown return to office. Hill links arms with Lemuel and Joshua and leads them in the direction of the pit. They arrive at pit. Lemuel and Joshua are breathless with surprise.

Hill (*explanatorily*): "You will note we've done away with the four men who dug clay with picks and shovels. That little excavator and one operator produce just twice as much raw material. Also, we got rid of the old horse and cart; that two-yard dump car with automatic end-dump reduces the entire cartage operation to rope-haulage. See (*pointing out operative detail of mechanism*), the car follows those platform rails, and is discharged automatically, by means of special curve rails, right into the granulator. It requires no hand labor at all." (*Leads them to position of granulator.*) "Note how simply it works. As the car reaches the point of delivery, the idler wheels engage with the curve of the guide rails. This action causes the automatic tipping of the car body, by lifting the rear end of the body from the truck, with immediate discharge of contents. Up to this point we use only three men, whereas you used six men." (*Lowers his voice to confidential tone, so as not to attract the attention of nearby workmen.*) "The gasoline consumption of the excavator engine per day amounts only to \$1.05."

Joshua (*as usual when he tries to follow a low pitched-voice, misunderstands*): "Now, ain't that too bad! Is it Brown—that tall, slim chap that never says nothin'—that has it?"

Lemuel (*confused*): "Has what?"

Joshua "Consumption."

Lemuel (*exasperated*): "No, it's th' gas engine: \$1.05 worth a day."

Joshua good-naturedly joins in subsequent laughter.

Hill (*continuing*): "And the labor down to this point amounts only to \$10.50 a day. Of course, it costs a few pennies extra for power to drive the hoist-drum, but the saving is considerable over the old plan of using six men and one horse to do the same job."

Joshua (*much interested*): "Lem, that's good business."

Hill (*continues*): "We installed this clay-feeder primarily as a labor-saver and to increase the efficiency in feeding clay to the crusher. You'll note the hopper has capacity enough to hold several car loads of material. The granulator breaks up the large lumps and thoroly mixes the different strata of clay as they come from the bank; this gives us better and more uniform products and helps us to meet competition."

Lemuel: "Learnin' anything, Josh?"

Joshua (*enthusiastically*): "A plenty-big heap, Lem."

Hill (*continues*): "You see, the granulator feeds the clay into this compound crusher-disintegrator. The two upper rolls act as a distintegrator and the two lower rolls as a crusher. From here" (*moves forward*) "the clay is delivered to the pug-mill of the soft-mud machine by means of this conveyor." (*Moves a little further on.*) "When we installed this self-dumping, automatic soft-mud brick machine, we replaced six men and increased production over forty per cent."

Joshua (*unable to restrain his approval*): "Smooth as a willow whistle, Lem, eh?"

Lemuel nods his head in deep study.

Hill (*continues*): "How many men did you formerly use to load the pallets on carts and haul them out to the old open-air dryer?"

Lemuel (*thoughtfully*): "No set number; sometimes four; sometimes five: sometimes mighty nigh twice that many."

Hill: "Lose much ware by careless handling?"

Lemuel (*mournfully*): "It hurts my pocketbook to think of it!"

Joshua (*with an echoing sentiment*). "Lem an' me both had to quit church from cussin' so much about it. An' it warn't only the men! If we got in a hurry for a batch of ware, it'd rain or snow or freeze or do some other goshanged contrary stunt! I often wonders how Lem an' me kept from committin' suicumfickle! Ha! Seems funny now, but 't warn't no joke then!"

Hill (*leading them out to new dryer*): "Well, we can't afford to wait for fairweather signs anymore. By this gravity roller and rope carrier system, two men pick up the pallets and set them on the racks, and this little steam-pipe-rack dryer turns a new batch of ware into the kilns every twenty-four hours."

Lemuel (*seems stunned, but weakly asks*): "Y' ain't kiddin' us, lad? Twenty-four hours? Our old average was eight days!"

Joshua (*significantly*): "Learnin' anything, Lem?"

Lemuel (*brusquely*): "You an' me's a couple of Brazil peccans. We been readin' 'bout these things in *Brick and Clay Record* for twenty-five year, an' never did nothin' but make fun of 'em an' call 'em—"

Joshua (*supplying word Lemuel is striving to remember*): "The-o-ry, Lem."

(*Addresses Hill*): "Lem an' me warn't never very strong fer theory, bein' practical brickmakers."

Lemuel (*contemptuously tugs at his own chin whiskers and points accusingly at Joshua's own goattee*): "Bein' practical Angoras, y' mean. As brickmakers we ain't been even high-class goats. Like all fools, we calculated we was too smart to learn."

Hill (*interposes in a conciliatory tone, and leads the old partners toward the kilns*): "We bring the ware out here from the dryers on cars—that means fast handling. We still use the old clamp updraft kilns, but the furnaces were remodelled and give considerably better results."

A huge truck bears down on them from the storage sheds with alarming speed. Joshua and Lemuel leap alertly to one side.

Joshua (*to Hill*): "Who is that feller—De Palmy?"

Hill (*laughingly*): "That's Jimmy O'Connor, your old stable roustabout."

Lemuel and Joshua (*in chorus*): "Jimmy O'Connor!"

Hill (*rather puzzled*): "Yes. Why?"

Lemuel (*nonplussed*): "Well, I'll swan, be jiggered, by gum! That feller was th' laziest young man I ever seen; so plagued lazy he slept with his shoes on."

Joshua (*reminiscently*): "I seen him go half-asleep a-curryin' a Missouri mule, an' the consarned critter turned him three summersets an' a handspring."

Lemuel (*solemnly*): "S a fact. Have y' been puttin' pepper in his likker?"

Hill (*confidentially*): "Let me put a bug in your car. O'Connor is a speed demon. When we got rid of the teams and brought in the battleship trucks, his eyes popped with ambition. He wanted a chance to learn to drive one of 'em. We let him." (*Soliloquizes*): "It's been my experience that the more mechanical speed you place in a man's hands, the faster he likes to move, other conditions being right. Give him a stableful of Missouri mules and he'll get so lazy and contrary that he'll go

to sleep standing up. Give him a 5-ton, 60-horsepower motor-truck, and he'll blister the roads with speed. The same theory holds true, from digging clay to selling fire insurance."

Joshua: "Learnin' anything, Lem?"

Lemuel: "Wait till I get you in private."

They now return to the office, and Hill invites them in. After both have been heartily greeted again by Quincy and Brown, Hill introduces them to Lottie, *steno de luxe* and so full of pep that the sight of her takes thirty years from the shoulders of Lemuel and Joshua. The entire company—Hill, Quincy, Brown, Lemuel and Joshua—then pull their chairs up in a kind of family circle. Hill gives Lottie a meaningful look. She immediately opens the new safe and returns with two large envelopes, handing one to Lemuel and one to Joshua. Both look puzzled.

Hill (*encouragingly*): "Help yourself, partners!"

Lemuel and Joshua, with trembling fingers, both withdraw a number of finely engraved stock certificates from their individual envelopes. There are seven certificates for each, each certificate of \$250.00 denomination. Lemuel and Joshua finger them askantly."

Hill (*cordially*): "Your shares in the business, gentlemen."

Lemuel (*the first to recover*): "But I—er—I signed that check fer payment in full."

Hill (*laughing*): "But the boys and myself offered you \$25,000 cash and \$3,500 in stock. We're glad to keep our word. Of course, if you'd prefer cash, we'll take the stock off your hands, say, at a ten per cent. discount right now. But we've got big things ahead. That old clay bank out there is almost inexhaustible. Next year we plan to increase our capitalization, say, to \$500,000. We're going to put in new kilns, and increase production to some 75,000 or 100,000 a day. I've been over to see the railroad chiefs. They have promised us a sidetrack extension by next Spring. And—"

Joshua (*who has been straining forward to catch every syllable, now interposes with restrained anxiety*): "I don't know how Lem feels, but if its all the same to you fellers, I reckon I'd be kinder proud of these things." (*Fingers certificates affectionately*.) "Lem an' me was with th' old plant a long, long time, y' know."

Lemuel: "'T ain't th' old plant, no more 'n th' new, I'm thinkin' of. Y' see, Josh is kinder shy, but I know how he feels, an' I calculate to say we're both right smart proud of our chiefs."

Quincy (*strategically rises, walks to desk, returns and passes cigars*): "Come out and see us often. And freeze tight to that stock. We're going to cut a big melon here in another year."

Lemuel and Joshua exit and walk down the brick path to where Mose stands with old Jerry in tether.

Lemuel (*to Mose*): "Pretty good pardners we got, Mose."

Mose (*the sunrays beaming athwart his black face*): "Fine gen'men—bery fine gen'men. Dey 'creased mah wages two dollahs a week. An' Marse Hill he gibs Mandy his rough wash. An' Marse Quincy he often gibs me tickets fo' de pitchah show. An' Marse Brown, he don' say much; but sometime he slip me two bits an' say, 'Buy candy fo' the kids, Mose.' Dey sholy am good to ol' Mose!"

The old partners mount thoughtfully into the runabout, and ride in silence until the plant is obscured from view. Rounding an elbow in the road, they unexpectedly encounter old Slim Hardscrabble, their most ancient and bitter competitor. Hardscrabble likewise rides in an open runabout, but behind a fine-blooded black mare. He puts up his free hand, motioning Lemuel to draw rein. The two buggies stop parallel to each other.

Hardscrabble (*indignant that, for the first time in his life,*

Lemuel and Joshua, outshine him, in dress, manner, and bearing): "Musta struck it rich in Florida."

Lemuel (ironically): "Nope! We struck it rich, then went to Florida."

Hardscrabble (heatedly): "Well, I'm warnin' you! If you got any int'rest in that plant—sell! 'Cause when I get thru with them young whippersnappers, they won't have a shirt to their back!"

Lemuel (philosophically): "Better be careful, Slim. While you're a-gettin' their shirts, they'll probably skin you alive—hide, hair, n' ever'thing."

Hardscrabble (furiously): "They ain't no man c'n come into these diggin's an' price-cut me!"

Lemuel (adroitly): "Been trimmin' you, already, eh?"

Hardscrabble (sarcastically): "No! Cheatin' themselves! I bid on the new schoolhouse in Swifton—put in the lowest figger any man could set an' make an honest dollar."

Lemuel (whistles and tells Joshua the news): "Some contract! Th' new schoolhouse! Oh, boy!" (To Hardscrabble:) "If you're lookin' fer a scrap, Slim, turn you're hoss around—them kids is maneaters! An' don't ferget who started this price-cuttin' about a year ago! Kinder put a noose over you're own neck, eh? Ha! ha!"

Hardscrabble (still obstreperous): "Howinell c'n they make anything with th' equipment you willed 'em?"

Lemuel (winking): "Lots of things c'n happen, Slim, in four months. If y' wantta see th' best equipped clay plant in these parts, make a friendly call on Hill, Quincy and Brown. But don't start nothin'! Them lads is so smooth they'd slip out o' you're hands like a Mississippi eel."

Joshua (itching to get in a thrust): "Mebbe if y' wantta

get out of business a-fore you goes broke, Lem an' me could induce our partners to buy!"

Hardscrabble (angrily turns back mere shortly in road and faces direction from which he came): "Go to h——! There's room in this section fer two real plants! I'll put in new equipment from cellar to garret! I ain't been readin' *Brick and Clay Record* fer pretty nigh thirty year fer nothin'!" (Drives off at rapid pace.)

Lemuel and Joshua practically hug each other in joy.

Joshua (chestily): "Some pardners, Lem! They've sure got old Slim guessin'!"

Lemuel (with great satisfaction): "Best pardners in these parts. Young, pergressive, an' full of pep." (Lapses into thought; then turns to Joshua as tho inspired:) "Reckon you an' me c'n rest easy from now on, Josh. Ever think of gettin' married?"

Joshua: "Mebbe so; but I ain't desertin' an old pal."

Lemuel: "Shucks, talk sense! The old brick house is more'n big enough fer two couple. An' Sally Snow an' Kitty O'Leary are both widders now, an' their childer all growed up an' married."

Joshua (suggestively): "But we can't go courtin' behind old Jerry no more, Lem."

Lemuel: "Don't 'tend to. Mebbe old Mose'd like to have Jerry. You an' me 's members of the High Quality Brick Co. Ain't no reason why we can't go halvers an' get a Lizzie, is there?"

Joshua (clapping Lem on knee): "I'm sold, Lem! Right now, by cracky!"

Lemuel: "Giddap, Jerry! Let's go!"

(Curtain.)



RE-CIRCULATING DRYER USES LITTLE POWER

H. H. HALLATT of the Tilbury (Ont.) Brick & Tile Co., Ltd., has replaced the burned out plant of the company with a new one. In an interesting interview he told just what he did to secure required results. He said:

"In rebuilding, my first thought was, of course, to build something that could not burn down. We did that. The next consideration was to arrange the machinery all on one floor so that it was 'get-atable' and also to arrange the hauling of the clay direct from the pit to the feeder with a locomotive and without drawing the cars up an incline. We did that.

"The next consideration was to arrange our machinery in an up-to-date daylight factory. We did that. We are quite proud of our light, clean, machine room. In fact many visitors tell us it would do credit to a pure food factory.

DESIGNS DRYER HIMSELF

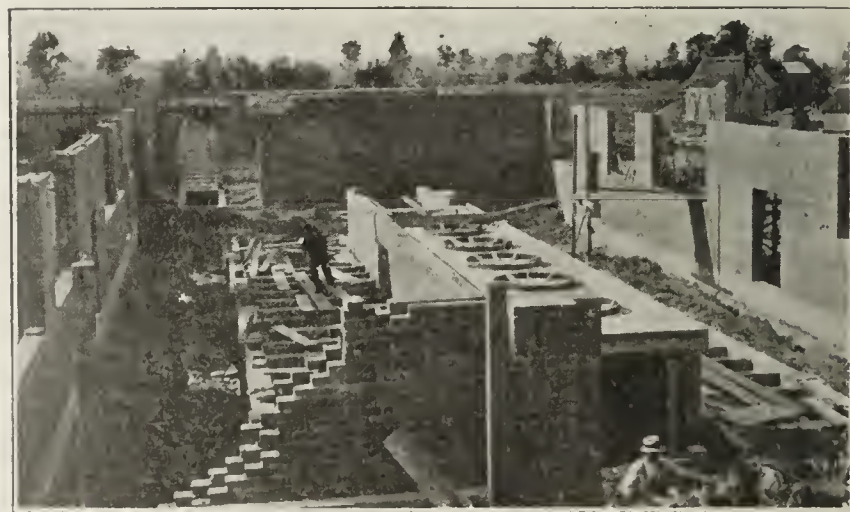
"Our dryer building is the same construction as our machine room. The dryer itself is of brick, concrete and steel construction. When our old dryer burned I told the boys I was going to build a dryer out of my own head and it wasn't going to be of wood, either. There was a possibility that it would be 'solid concrete,' but I am pleased to report that it is a success. We are now running full capacity on 5x8x12-inch building tile and the dryer is handling our output with practically no waste, and really drying the ware to perfection. These blocks are the hardest pieces we have to dry.

"The dryer is a six-track re-circulating waste heat dryer and is only sixty-three feet long and twenty-eight feet wide. We use only seventy-four dryer cars. The dryer itself only holds fifty-four cars at one time. We make a couple of shoves during the night. The cars are pushed quite easily by one man

thru this short dryer without the use of a jacking apparatus. The capacity of the dryer is easily a twenty-four foot kiln full, or approximately 20,000 four-inch tile per day. It will dry the same tonnage in hollow ware and from twenty-five to thirty thousand brick per day.

RE-CIRCULATION OF AIR GIVES BEST RESULTS

"I am now thoroly convinced that the mechanical re-circulation of drying air is not only a success but a necessity if the best results are to be obtained.



View of the Dryer Designed by H. H. Hallatt, Which He Reports Is Working Successfully.

"The drying air passing horizontally along the side and top of a tunnel makes the drying of tender clays made into hollow ware and drain tile practically impossible without excessive cracking.

"By re-circulating the drying air, thus breaking up the hot and cold currents, and by forcing the air either up or down thru the hollow ware standing on end on the cars, ideal control of the drying and complete saturation of the drying air is possible, which, of course, also makes possible drying with the utmost economy.

"The dryer is equipped with nine Ventura Fans (48 inches) and two exhaust fans. Five H. P. is actually required to operate all the fans, altho our dryer motors have a combined



General View of the Rebuilt Plant of the Tilbury (Ont.) Brick and Tile Co.

capacity of eleven H. P. While we are now using five motors on the dryer (we had them in the old plant) the fans are so arranged that one motor or engine would be sufficient.

ONE H. P. REQUIRED TO OPERATE NINE FANS

"The power required to operate the nine re-circulating fans is actually less than one H. P. This was a surprise to me, as I expected that the re-circulating fans would have to run faster than I now find necessary. If I remember rightly, Mr. Greaves-Walker, told me in discussing the sketch I made on the board at the C. N. C. P. A. convention three years ago, that it would take fifteen H. P. to operate but three of these re-circulating fans. I am glad that Mr. Greaves-Walker was wrong for once. His statement almost discouraged me at the time but I was determined to try out the idea."

The new factory building is 200x50 feet. It is built of brick, steel, concrete and steel sash with gypsum roof. It cost about \$30,000. The larger machinery replacing the burnt equipment has a capacity of 18,500 four inch tile or 24,000 brick. Tile up to fifteen inches in diameter is produced. A gasoline driven shovel and a gasoline locomotive are among the labor saving devices employed.



Pageant of Progress Boosts Clay Products

Chicago's Pageant of Progress, a mighty spectacle and exposition drawing hundreds of thousands of people to the

famous Municipal Pier is a monstrous display of modern and advanced science and engineering progress in every industry and every phase of human existence. Clay products are represented creditably with exhibits which stand well among the hundreds of others occupying space at the Municipal Pier.

Three separate clay products exhibits were on display representing three distinct fields in the industry, the Chicago Face Brick Association, the Chicago Brick Exchange, and a terra cotta exhibit sponsored jointly by the Northwestern Terra Cotta Co., Midland Terra Cotta and Ceramic Co., and the American Terra Cotta Co., of Chicago.

The display of the Chicago Face Brick Association was simple but attractive. Several rows of neatly arranged samples of face brick of practically every color and texture manufactured by the members of the organization formed the display.

As at the Own Your Home exposition the Chicago Brick Exchange took the opportunity afforded by the Pageant of Progress to exploit the Ideal wall. Several samples of the construction of this brick hollow wall were on display giving spectators a good chance to view the structural peculiarities of the wall. The other part of this exhibit consisted of the front of a full sized house built with the Ideal wall, of common brick, selected, laid in chocolate colored mortar. This attracted considerable attention, and it is really surprising to see how very attractive even Chicago commons can be when laid in the wall in this way.

The terra cotta display was very impressive, showing some very exquisite products of the kilns. Beautiful pilasters of various colors with designs showing to advantage the skill of the artists modeling in this very plastic material. An extremely interesting part of the terra cotta exhibit was the terra cotta "bank window." This is a new field for terra cotta in interior work and it should prove very popular. By "bank window" we mean the section which usually separates the cashier's cage, paying teller, etc., from the space reserved for customers and depositors. The rest of the display consists of beautiful polychrome and decorative work.



To Show Why Building Should Be Done Now

A General Readjustment Committee in Wilmington, Del., is endeavoring to get together facts regarding every phase of the building industry with a view to presenting them to the public in the hope of convincing the people that now is the time to build. Every branch of construction is represented on this committee and comparative prices of everything that enters into building construction in cities within a radius of 100 miles of Wilmington, are being obtained. Every line is being investigated to ascertain whether a further reduction in price is likely or whether the bottom has been reached.

Renewed Activity Will Follow Building Clean-Up

Under the above caption appears in this issue an editorial which is of great interest and value to every clay products manufacturer. Do not fail to read and study the thoughts presented. You will find it advisable to keep a copy of this editorial always on hand as a forceful argument to convince the pessimist and "Doubting Thomas" customer that all is not yet lost in the construction industry.

POINTERS ABOUT BELTING *in* CLAY PRODUCTS PLANTS

*Methods of Taking Care of and Treating Each Type of
Belting for the Various Uses—Records of Installations
Will Show Good and Poor Service in Every Case*

THE QUESTION of the proper type of belting to be used in the several installations in a clay products plant is a big item, since many losses of time and production can be charged to the inefficiency of the belt used. In fact at times the actual money that it was intended to save in the first cost of the belt, is lost in a few months' operation in these two items of loss.

Belting is made in three general grades, namely leather, canvas and rubber or composition belting, and each is made in several thicknesses and widths so that practically any strength of belt can be found of each of these materials. Each has qualities that fit it to certain uses and conditions which we will explain later.

LEATHER BELTING

Leather belting is made from the tanned cowhides, and for belts eight inches wide and wider should be cut from the heart of the hide, because that part is of more uniform thickness and has practically no stretch. For the narrower widths the other parts of the hide can be used as they very seldom transmit a large load. Naturally leather belts are made up of a number of hides. These are glued together by a special glue which can be purchased ready for use or can be made of 16 parts of gutta-percha, 4 india-rubber, 2 pitch, 1 shellac, and 2 linseed-oil, according to Kent. The solids are cut into small pieces, melted and mixed thoroly. The hides are thinned or shaved on one end from the full thickness of the hide to nothing, and two of these shaved ends are put together so that when finished the belt will have the same thickness thruout. For belts up to 10 inches in width, the splice should be 10 inches long, and for belts wider than 10 inches the splice should be as long as the belt is wide, with 18 inches as the maximum splice on any width.

LEATHER BELTS LAST MANY YEARS

Almost all leather belts are made endless and if the belt is ordered that way from the manufacturer one shaft should be loosened from its bearings, the belt put in place and the shaft pushed back into its bearings. If the belt is forced into place by running it on, with the pulleys and shaft in their ordinary locations the leather is liable to become unevenly stretched and give poor service later. This is not very noticeable on belts of narrow width as used in machine shops, etc. Many leather belts are ordered in one piece and made endless after being put into place. Belt stretchers are used for taking up any slack. Care must be used in making the final splice and an experienced man employed. There are records of leather belts that have been in use for thirty and forty years, where the load carried and the care given the belt have been followed according to rule.

CANVAS BELTING

Canvas belting is made from canvas or duck either folded together or woven in one piece. The folded belt should have the edges of the piece on the inside of the belt as this will in-

crease its life. Some belts are made of canvas treated to withstand water, oil, steam, changes in temperature, etc., before being folded, but other brands are made that have all of the preservative applied after being folded. This is really immaterial if it is applied so as to do the work properly. Folded canvas belting is stitched so that the plies work together as one piece, some brands being stitched only lengthwise and other brands being stitched both lengthwise and crosswise.

Woven fabric belting is woven on special looms that make the required thickness and width in one operation. Naturally it is not subject to the same dangers of wear as the folded and stitched belt, because the latter deteriorates quickly if the stitching wears or if the edge wears enough to allow the plies to separate. Naturally the size of the cotton thread or yarn and the length of the staple of the cotton, affect the strength of the belt just as well as the thickness, width and method of manufacture.

RUBBER BELTING

Rubber belting is made practically the same as folded canvas belting, with a layer of rubber between each ply of the canvas or duck and also a layer of rubber over the entire surface of the finished belt. Composition belts are made in about the same way, altho some are woven as is a woven canvas belt and the composition is pressed in at the same time.

Canvas or rubber belts are usually fastened with metal laces, as they do not stretch as do the old style raw-hide and are applied so much quicker. Alligator laces are fine for drives in the machine shop or in the plant where the belt must be taken apart and put together again at intervals. This fastener is smooth on both sides and will work perfectly in connection with an idler. Belts can be shortened easily when this type of lace is used as only one end must be changed. There are two other metallic laces in common use, one of which consists of a plate having hooks to drive into the belt and clinch on the inside, and another of which has a curved plate made to fit on the outside of the belt. Holes are provided thru which rivets are driven into and thru the belt, so that they can be clinched on the inside. In using any type of metallic fastener best results will be obtained if the correct size to suit the thickness of the belt is used. The fastener should be applied according to the directions of the manufacturer of the fastener.

BELT STRETCHERS AND TIGHTENERS

A considerable amount of the trouble that is caused by belts comes from the way that they are tightened and spliced. Every splice should be square with one edge of the belt and if there is more than one splice in a belt each should be squared from the same edge. Many times a tightener is not clamped down onto the belt as much as it should be, and as soon as the strain is put upon it by the long bolts, these clamped pieces slip. At times this slip is almost imperceptible, but if it amounts to one-quarter of an inch it is enough to cause trouble, and in some stretchers one edge can slip and the center and the other

edge stay in place, making an irregular and crooked splice. If the stretcher slips uniformly across its width it may stay square, but in most cases this does not happen and that is why very special care should be exercised on this point. Uneven slippage is more likely to happen with the stretchers in which the side bolts are tightened independently, than in those that are tightened by a lever acting thru gears on each tightening bolt at the same time. The latter are preferable for several reasons; they will tighten a belt quicker and more uniformly, and in general prove more satisfactory, so that the small extra original cost will be repaid in a short time.

There are three general types of uses for belts in a clay products plant, namely, drives, elevators and conveyors, and since each has peculiar functions to perform we will consider them separately.

DRIVES

The use of leather belts is almost entirely restricted to drive belts and even then they are usually found only in the main drive or in the machine shop, etc. The leather belt is the best type for main drive on account of its uniform performance and the fact that it stretches so little. Steam, oil, water, etc., must be kept away from it, however, and it must be installed so that the motion of driving will run with and not against the laps or splices of the belt. Single leather is generally considered the equal of four-ply rubber or canvas, double leather between six and eight-ply and triple leather the equal of ten-ply. Stitched and rubber or composition belting is used for main drives where it is not desired to have such a large initial expense. These are not as satisfactory as leather unless the distance between centers is large enough to permit the belt to stretch and still have ample contact on the faces of the pulleys. In every case, no matter what belt is used, one of the main requisites of satisfactory service is that the tight part of the belt will be on the bottom of all horizontal drives. For transmitting large loads like main drives, vertical or even angle drives where the belt must be kept tight in order to prevent slippage should be avoided, if at all possible. A tight belt pulls the shafts on which the pulleys are mounted, against the boxes or bearings in which they are running. This friction reduces the load transmitted and may result in a hot box. Drive belts work satisfactorily with a sag of four or five inches in the upper, loose part of the belt, if the distance from center to center is about thirty feet. Very often the tendency of a belt to slip can be avoided by covering the pulley with a piece of

the same type of belt. This is done by fastening the extra piece of belt to the pulley with large flat head bolts like elevator bolts. Another type of covering for this purpose is a lagging of wood which is bolted to the outer rim of the pulley. The object in each case is to reduce the friction and loss of power resulting therefrom. The percentage of benefit is somewhat problematical as it will be not the same in every case, but there is no difference of opinion on the fact that it will benefit, and to a large degree. In every case whether for driving, elevating or conveying, a belt should be of proper thickness and for driving, a six-inch belt of double thickness will transmit the same power as a twelve-inch of single thickness. The former is to be preferred, as its life will be longer under the same conditions.

ELEVATING BELTS

Whenever possible the use of idlers should be dispensed with, as they tend to create the same condition as tight belts, namely, friction in the boxes or bearings of the shafts. If the belt is not tight enough without an idler, the pulleys should be covered, or the drive lengthened or the load lightened before the use of idlers is adopted. The writer knows of one installation where an old belt several inches too long was run on the two pulleys of a main drive, and the regular belt put on top of this old belt. The old belt carried none of the load, but served to prevent any slippage between the main belt and the pulleys. This worked satisfactorily, and all indications were that it worked better than covered pulleys. The old belt sagged several inches below the main belt.

Leather belting is very seldom found in elevating service, on account of its cost, but either stitched canvas or rubber or composition belting give good service. The pulley at the bottom of the elevator should be slotted so that any accumulation of the material to be elevated will not pack on the inside of the pulley and thereby tend to throw the belt to one side or the other. At several points in the height of the elevator small rollers should be mounted at right angles to the belt to keep it from swinging, thereby losing part of its load and at the same time wearing the edges. The pulley at the top or head of the elevator should be covered in order to insure a freedom from slippage.

CONVEYING BELTS

The proper selection and operation of conveyor belting is a larger question than for either of the other uses, because the

	COST	MAKE AND SIZE	DATE PUT IN	DATES CUT AND AMOUNT-PROBABLE EXTENT OF LIFE						DATE TAKEN OUT
MAIN BELT										
TO DRY PAN										
TO PUG MILL										
TO MACHINE										
ELEVATOR										
TO COUNTER SHAFT										
COUN. TO ELEVATOR										
TO DISC FEEDER										
WASTE BELT										
TO WASTE BELT										
OFF BEARING BELT										
TO OFF BEARING										
PAN CONVEYOR										
ETC. ETC.										

uses and methods of operation differ so much. Two of the main items are to prevent the clay, coal, ashes or other material that is to be conveyed from dropping onto the belt so hard that the surface will be injured and to prevent the belt rubbing against any board or other object in its travel. The former will eventually cut the stitching of a canvas belt and the rubber coating of a rubber belt. For conveying work the upper surface of rubber belting has an extra layer of rubber, which can be purchased in any thickness from one-sixteenth to a quarter of an inch. In order to obtain full capacity from a conveyor belt the material should be fed on it uniformly. This can easily be arranged by installing any of the clay feeders on the market. If possible the conveying of wet sticky clay should be avoided during extremely cold weather, because the water is bound to soak into the belt and the material freeze to it.

Some of the trouble from this source can be avoided if the belt is exposed to outside temperature, by cleaning the belt of all material at night. A few pipes filled with exhaust steam during the day will add materially to the life of the belt.

BELT DRESSINGS

In many cases it is advisable to use a dressing to preserve the life of the belt and counteract the effects of dampness, etc., and increase the contact between belt and pulley. These can be purchased ready for application but in every case they should be used with care, as even a small excess will pack on the pulley and tend to throw the pulley out of line and also to make one part of the belt stretch more than the rest. Beef tallow and castor-oil are very good for leather belts, but resin is considered injurious. For rubber belts, Kent says never to use animal oils or greases. On the other hand they will be improved by applying with a painter's brush a composition of equal parts of red lead, black lead, French yellow and litharge. These should be mixed with boiled linseed-oil and enough japan to make it dry quickly.

AMOUNT OF BELTING USED IN CLAY PRODUCTS PLANTS

Few, aside from those that purchase belting or pay the bills, know the large amount of belting that is used in a clay products plant. We append a list of the equipment in one plant making 40,000 common or face brick, or about sixty-five tons of hollow tile, drain tile, etc., per day, hoping that this will assist those in charge of belting to realize the importance of taking care of all of it.

Main drive from engine to line shaft (formerly double leather)	18" 6-ply rub.	78' 6"
Drive from line shaft to dry pan	14" 4-ply rub.	62' 5"
Drive from line shaft to pug mill	12" 4-ply can.	43' 6"
Drive from line shaft to auger machine	14" 6-ply rub.	62' 4"
Elevator belt	14" 4-ply rub.	125' 0"
Drive from main shaft to countershaft	8" 4-ply rub.	32' 7"
Drive from countershaft to elevator belt	8" 4-ply can.	23' 8"
Drive from countershaft to disc feeder	8" 4-ply can.	26' 2"
Waste belt	12" 4-ply can.	115' 0"
Drive for waste belt from countershaft	6" 4-ply can.	22' 10"
Offbearing belt	12" 4-ply can.	100' 0"
Drive belt from countershaft to offbearing belt	6" 4-ply can.	15' 3"
Conveyor belt to feed dry pan	12" 4-ply rub.	110' 0"
Drive belt from pan shaft to conveyor	6" 4-ply can.	20' 5"
Drive belt from main shaft to hoisting engine	8" 4-ply rub.	70' 6"
Drive belt from small engine to dynamo	single leather	52' 4"
In the machine shop from motor to line shaft, and from line shaft to saw, emery wheel, lathe and shaper		
	2" sin. lea.	15' 3"
	4" sin. lea.	30' 7"
	6" 4-ply rub.	100' 6"
Total		1107' 16"

BELT RECORDS

In order to have some information regarding the life and service of a belt the accompanying form has been found to be very serviceable.

The use of a form of this kind will enable the purchasing agent and the master mechanic to find which is the best type of belt for their use and to compare different sizes and brands.

In figuring on the life of the belt some means must be found to compare the work done, the thousands of brick or the tons of material made.

Another form that ought to be in use at every plant is an inspection chart. At stated intervals, not more than a month apart, one man who is responsible for the production of the plant or the up-keep of the machinery, should make a regular inspection of every belt in the plant. Spaces should be provided for showing the condition of belt fasteners, the wear on the belt face, and edges, whether or not the pulleys have grease or dressing accumulated on them, etc. This inspection will take but a few minutes, and will pay on the increase in production and freedom from serious belt trouble which will follow.

The one who signs the report will feel an added sense of full responsibility as far as the inspection goes and freedom from blame for anything not covered by the report. It is human nature to be more careful with a written report than a verbal one or where no report at all is made.

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Improvements in Business Are Noted

One branch of the clay products industry states that the month of May showed a decided improvement over April. This industry is in a position to feel the pulse of construction work as quickly as any. The production for May showed an increase of twenty-seven per cent. over April and the unfilled orders on the last day of May were seventeen per cent. larger than they were on the last day of April. These are the latest figures available. These figures show the improvement over the country and are not the opinion of one man or any group of men. They speak for themselves. Most of the improvement seems to be located in the southern states, with the northwest and the eastern states also getting their share.

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French Clay Industries Show Big Growth

An interesting and comprehensive outline of the growth of the French refractory and china industries was given by M. Guerineau, honorary president of the Syndicat des Fabricants de Produits Ceramiques de France, at a recent meeting of that society. He said that at the present time the output of refractory brick approximate about 700,000 tons a year which amount is sufficient for all home needs. This is an increase of about 200,000 tons of material as compared with the pre-war period, of 1914, when the production aggregated 500,000 tons. Regular building brick has now reached a total output of about 12,000,000,000 brick per year, and there is hardly a point of importance in the country without its brick kilns.

Home producers, it was pointed out, are now in position to meet every demand for pavement and floor tiles, whether semi-opaque or incrustated, and manufacturers of enameled tiles for walls, tho rather few in number, are also able to furnish quantities entirely sufficient for the local demand.

In the matter of china and porcelains, mention was made of the competition that must now be met by the district of Limoges, but production here, it is said, will continue to hold its own on account of its quality and general artistic finish. There has been a marked increase in the manufacture of electrical porcelain products, and French production is said to be ample for all local needs. Clay pipe is growing in output, now approximating about 100,000 tons. The demand is growing hand, decorative floor and wall tiles are losing some of their popularity.

WINNING PLANS *and* FACE BRICK *for a* HOME

American Face Brick Association Stages Novel Essay Contest for Young Married Women—Over 4,000 Persons Apply for Rules of Contest—527 Essays on “My Dream of a Home” Written

LOOKING OVER the work of the American Face Brick Association one must unqualifiedly compliment that organization on its splendid advertising and publicity campaigns. Some excellent booklets showing hundreds of small house designs have been distributed and thousands of pamphlets setting forth the merits, advantages and possibilities of face brick construction have been published and sent to prospective home builders.

One of the booklets, the “Home of Beauty,” recently formed the basis of a unique contest designed to stimulate interest in building homes and especially face brick homes. Prizes were offered for the best twenty-five essays on the subject “My Dream of a Home.”

RECEIVE 4,000 APPLICATIONS

The contest was begun in March and advertised in all the well known women's magazines, such as the “Ladies' Home Journal”, “Woman's Home Companion”, and numerous other popular women's publications. Over 4,000 applications for the conditions were received proving conclusively that interest in home building is very high. The conditions for entering the contest stipulated that only women who had been married less than ten years could prepare an essay. The length of the essay was confined to 1,200 words, the nature of the subject matter, whether idealistic, sentimental, or practical being left entirely to the discretion of the competitor.

The prize for the writer of the best essay of all submitted was to be the plans and specifications of any house which the prizewinner might select from the numerous designs in the “Home of Beauty” or from some other booklet put out by the American Face Brick Association, and in addition, all the face brick necessary for the building of the home. Tho it was originally intended to give the next twenty-five full plans and specifications of the home which they liked the number of contestants was so large that it was deemed advisable to increase the number of prize winners. Accordingly, thirty-five persons were awarded drawings and specifications.

527 MANUSCRIPTS SUBMITTED

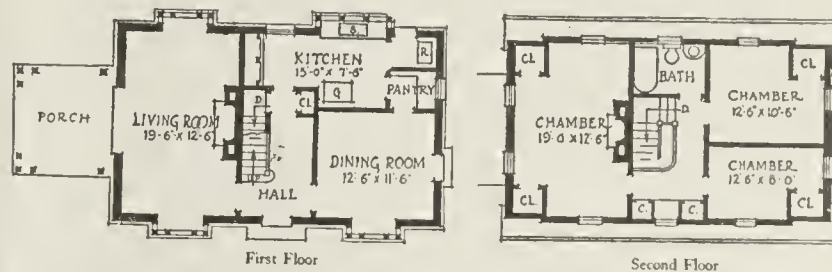
In spite of the fact that the conditions of the contest stated that all essays would be graded sixty per cent. on the subject matter and forty per cent. on English style, 527 young women submitted manuscripts.

The task of reading these manuscripts was a strenuous one but the judges and officials of the American Face Brick Association were very much pleased with the uniform quality of the essays. Great difficulty was experienced in deciding the winners and many of the essays were extremely close in points of merit. Many of the papers showed considerable skill and ability on the part of the writer in the proper handling of the English language and excellent presentation of the subject.

One of the most interesting manuscripts had for its subject the story of the three little pigs who went forth into the world to seek their fortunes. It is the same story Mother used to tell us many years ago. The first little pig did not go far before he decided to settle down. So he built himself a house of straw but had hardly begun his first meal when the wolf came, blew down the straw house and ate the little pig.

BRICK WITHSTANDS WOLF'S RAVAGES

Seeing the misfortune which befell his brother, the second little pig decided to profit by his experience. So he got himself a bundle of sticks and built himself as strong a house as he knew how. It was not strong enough, however, and when the wolf came he easily tore it down and had more pork tenderloin for dinner. Now the third little pig was a wise little pig and having heard of the wonders of brick he built himself a home of this material. Needless to say, when the wolf came all his efforts to



This Dutch Colonial Type of Home Proved to Be a Popular Choice by the Winners.

blow down or pull down the brick house were futile and he finally left in disgust.

Many other manuscripts proved to be extremely interesting reading and an almost endless variety of subjects was offered.

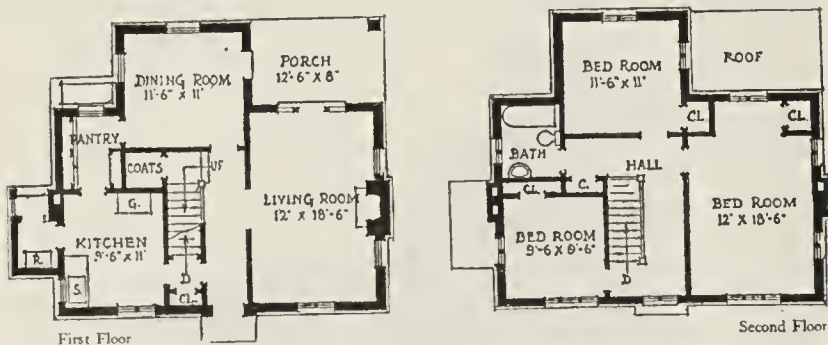
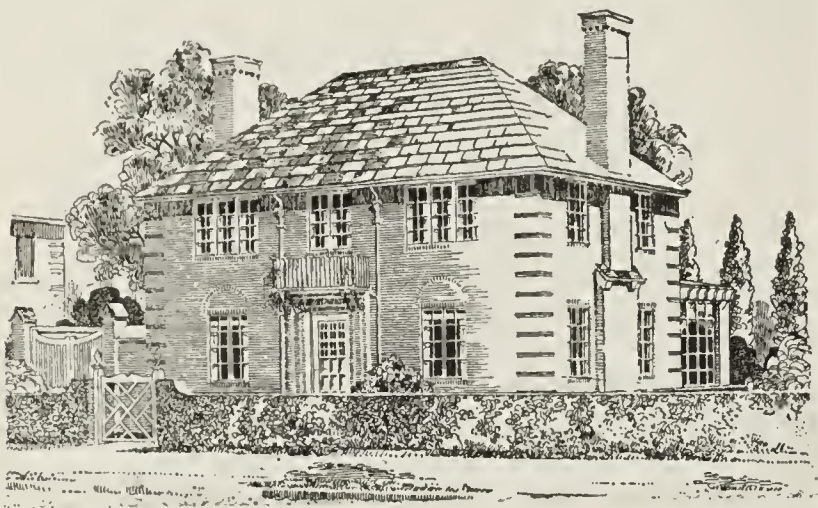
The prize winning essays were selected by capable judges in no way connected with the American Face Brick Asso-

ciation and the victors were judged purely on merit. The three judges were Mrs. A. P. Spaulding, of the Art Institute Extension Work in Chicago, Prof. A. C. L. Brown, Chair of English, Northwestern University, and Charles E. White, a well known architect in Chicago.

WINNERS VERY ENTHUSIASTIC

Mrs. B. F. Reynolds, of Carlisle, Ky., was declared the winner, entitling her to the plans and specifications and the face brick for a home, the face brick to be selected from the stock of any member of the American Face Brick Association or his recognized dealer. Mrs. Reynolds' name will be distributed to other competitors. In subject matter, style and literary expression Mrs. Reynolds was easily superior to the others, according to the judges.

Dr. G. C. Mars, promoter of the contest, stated that it was especially gratifying to see how enthusiastic the winners were in the expression of their appreciation for the



Another Type of Small House Which Was Chosen by Several Winners in the Contest. The Houses Shown in This and the Other Picture Are from the American Face Brick Association's Book "The Home of Beauty."

contest which made it possible for them to get the plans and specifications of a home.

Competitors received a copy of the "Home of Beauty" free and much splendid advertising will result from this, it is estimated. An enthusiastic lady from Colorado wrote to express her pleasure at the great variety of houses shown in the booklet and stated that friends on being shown the book exhibited much interest in it.

Inasmuch as the winners are privileged to choose any home from those shown in the "Home of Beauty" and in the Bungalow Books it will be extremely interesting to note which type of home enjoys the greatest popularity. This data will also be valuable in the compiling of future books.

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Proposes Lengthening of Road Building Season

In addition to his efforts to eliminate to a large extent the dull periods in the winter in the construction industry, Secretary of Commerce Hoover has recently extended his

work in this direction to include road building. In a letter addressed to the governor of each state Secretary Hoover has suggested the advisability of considering letting contracts for road improvements this fall instead of waiting until spring.

Thomas H. MacDonald, chief of the Bureau of Public Roads is in accord with Secretary Hoover in this work. He is of the opinion that contracts should be awarded as early as possible to give contractors an opportunity to place orders early. This will relieve congestion on the railroads to a large extent and insure speedier transportation.

One of the chief benefits to be derived from letting contracts in the fall would be an appreciable lengthening of the working season resulting in less fluctuation in construction and the completion of a greater number of highway projects.

The letting of paving contracts in the fall would undoubtedly be a boon to the manufacturer of paving brick as it would enable him to operate his plant for a longer season and in many cases prevent shutting down entirely.

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The Clays of Michigan

According to the report of the Geological Survey on Production and Value of Mineral Products in Michigan, that state contains few deposits of kaolin or china clays, and the chances for commercial deposits of such clays appear to be small. Due to the high lime content of most of the clay, the produce usually burns white, tho in many deposits there is an upper portion relatively free from lime, which burns red. Clays found in Michigan are as a general rule one of three varieties, either morainic or drift clays, lake clays, or river silts. The results of recent tests indicate that the occurrence of deposits of relatively low lime surface clays is more common than formerly supposed.

The pottery industry in Michigan has made almost uninterrupted growth since 1899, and since 1908 the growth has been rapid, increasing over 3,000 per cent. in ten years, the main increase being during the past three years. In 1899 the total value of the pottery output was \$29,741; in 1908, \$62,409; in 1917, \$1,187,981, and in 1918, \$1,976,436, a gain of 66.3 per cent. over the value for 1917. The increases were largely due to the greatly increased output of porcelain, electrical and sanitary supplies and porcelain and decorated ware.

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Employment Decreases; Clay Industry Increases

The latest number of the Labor Market Bulletin which is published monthly by the Bureau of Statistics and Information of the New York State Industrial Commission, states that the New York State factories continued to curtail production. This resulted in reductions in employment in eight out of the eleven chief industry groups. However, the reopening of several plants and increased activity in many others, account for a gain of eleven per cent. in employment in the manufacture of brick.

The bulletin goes on to state that "in the brick industry the revival of activity during recent months has been of such proportions as to result in an increase in employment over a year ago."

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Plant, Idle Several Years, To Be Opened

Johnston & Co., Ltd., are to re-open the brickyard at Kamloops, B. C., after it has been closed for several years. The company will make pressed and common brick. Electric power from the Kamloops civic plant will replace steam.

The BUILDING SITUATION *in the* EAST

THE OUTSTANDING FEATURES in the construction industry in the eastern district during the past fortnight find their inception at the nation's capital, where Herbert Hoover, secretary of the Department of Commerce, is bending every effort for a complete revival in building work.

Mr. Hoover's name also comes to the forefront in connection with a report of the Committee on Elimination of Waste in Industry of the American Engineering Council, which was appointed by him. It is shown that about one-half billion dollars a year is being lost in the building industry at the present time, the chief sources of waste being irregular employment, inefficient management and wasteful labor regulations. Conditions or customs prevailing thruout the industry and poorly designed equipment are set forth as secondary causes.

The building industry, including all trades and common labor incidental to it, is mentioned as ranking second among the branches of business, and contributes to the wealth of the nation more than \$3,000,000,000 yearly. From figures during the past six years, it is shown that thirty-two per cent. of the operations in the industry, which employes about 3,000,000 mechanics and laborers in a single year, are devoted to residential buildings, and eighteen per cent. to industrial structures, the term "miscellaneous" covering the remainder.

NEW ENGLAND DISTRICT

The trend of construction in New England territory is decidedly towards greater activity. With the textile and shoe industries reviving, there is a marked increase in industrial mill building of this character, with brick a strong leader among the construction materials. Several extensions ranging in investment from \$100,000 to \$500,000 are now under way. Home and apartment operations are also showing improvement, and each week is rounding out greater stability and larger totals.

New York brick is selling in the local market from \$17 to \$20 a thousand, delivered. The New England Brick Co., one of the prominent dealers, is quoting \$18 on the job, for common sand-struck in truckload lots. For selected water-struck varieties, the same company is asking \$31. Brick of this latter character, kiln run, at other dealers varies from \$29 to \$30, delivered. Connecticut common in the Boston market is being turned at \$21 and \$22. Face brick is holding at a \$50 level, with a number of rough texture varieties selling for \$5 to \$10 more a thousand.

NEW YORK FIRE BRICK \$60

Fire brick, No. 1, is selling at \$60, while high-grade material is being sold at \$70. Fire clay is priced at \$25 a ton. Standard sewer pipe is forty per cent. off list at the present time, with flue lining holding at a like discount. Double strength sewer pipe is twenty-five per cent. off list, and wall coping, thirty-five per cent.

Dealers at Providence, R. I., do not show much inclination for a recession in price levels, and materials are being held at fairly high quotations compared with neighboring districts.

Common brick ranges from \$26 to \$30 at the different yards, while fire brick, No. 1 Standard, varies from \$75 to \$100, the latter figure being asked for very high-grade material. Partition tile, 4x12 inch holds at \$220 a thousand, while 8x12 inch stock is quoted at \$390. Wall coping is

priced at from thirty-two to ninety-six cents a foot, according to size. Drain tile, three inch, is being retailed at twelve cents a foot, and four inch material at sixteen cents. Sewer pipe, single strength, is now selling at thirty per cent. off list.

BUILDING AT NEW YORK

There are many jobs now under way in New York, covering for the most part housing operations. Speculative construction is still an important feature of local activities, and a number of large apartment houses are being planned for early erection. Residential work in the Bronx, Queens and in Brooklyn is holding up well, and the bulk of call for building supplies is finding its way to this phase of work.

There is a growing call for brick, due, for the most part, to the housing work now going forward in the different boroughs. The price of Hudson River common is firm at \$15 a thousand, wholesale, and it is not likely that there will be any change in this figure for some time to come.

While the market is being supplied from the Hudson River yards in sufficient quantity, the call during the past fortnight has taken all arrivals and each week-end shows little if any stock on hand. The distribution has been running from thirty-five to forty cargoes a week. Brooklyn continues to lead the other districts in point of demand for the material, and in two weeks no less than thirty-six cargoes found their way here.

Other burned clay products hold well to present levels, and there is a noticeable stability to quotations. Face brick continues at from \$45 to \$55 a thousand, delivered. Rough red material is quoted at \$45, while buffs, both rough and smooth are selling for \$50, and grays from \$53 to \$55. Fire-brick is selling from \$70 to \$75, delivered.

CONSTRUCTION RECORD BROKEN AT BROOKLYN

Brooklyn is breaking all previous construction records. During the first six months of the present year, permits have been issued by the local building department to the estimated valuation of \$71,131,073, as compared with \$50,670,901 for the corresponding period of a year ago. The aggregate new building work in the 1921 months was \$63,808,055, the balance covering alterations, repairs and the like. For the entire city of New York, plans filed during the first six months of this year show a total valuation of about \$184,000,000, a gain of \$30,000,000 over the same period of 1920.

The construction situation in New Jersey is rather spotted. Some cities show a decided movement towards betterment, while other municipalities are lagging in distressing fashion. Every month is showing up better at Newark, with apartment and house construction far in the lead over any other building. The first six months of the present year show the greatest totals for work of this character since 1915; during the last noted year, permits were issued for dwelling erection to accommodate 848 families; in the corresponding period of 1921, the permits taken out are for an aggregate of 807, or only forty-one less than the 1915 record.

BUILDING IN 1920 AND 1921

The total building for the first half of 1921 in the city represents \$8,905,841, as against a figure of \$13,820,817 in the same time of a year ago. The 1920 totals, however, are inflated due to the fact of filing plans for projected work before a zoning ordinance went into effect. Some of the work

then projected has not, as yet, been put in actual operation.

At Trenton, Camden and other points in South Jersey, the situation is without interest. While a fair volume of work is under way, there is not a very large amount of new and projected work coming along to give the greatest encouragement for fall building.

Prices are easing a little on building supplies in the different important centers in the state, including Newark, Jersey City, Paterson and other points in northern New Jersey, with burned clay goods maintaining the lead in the matter of stability.

Common brick is being retailed by the dealers at \$20 to \$22 levels, with prices at the kiln in the Hackensack and Trenton districts ranging from \$17 upwards. The brick yards are keen after business, and there is a noticeable shading to quotations for sizable contracts.

PLANTS OPERATING AT FAIR CAPACITY

The different brick plants are operating at fair capacity, but with the season now about one-half over at the seasonal yards, the decline in production as compared with a normal year is very noticeable. There is little desire to stock up for the winter, and it will take a decided turn in the state of affairs to bring the producer to a point of deeming this advisable.

Face brick is being turned at levels varying from \$40 to \$55 according to the character of material. Fire brick is selling for \$70 and \$75 a thousand, delivered, and fire clay is around \$20 a ton.

Sewer pipe is rather a mystifying element in the market at this writing. There have been a number of important price fluctuations during the past weeks, with no indication of any stability, regardless of level. Manufacturers and wholesale dealers have dropped their figures anywhere from three to four points, but each time a tendency to rebound has been evidenced.

PHILADELPHIA SITUATION

With a settlement of the building strike which has waged for a number of months past at Philadelphia, Pa., now in sight, an improved situation shows up in this section. The employers have succeeded in enforcing all of their demands, with wage scale reduction from \$1.12½ to ninety cents an hour for the majority of the building trades. A forty-four-hour week will prevail, and all sympathetic strikes are barred. Carpenters, stonemasons, electrical workers and other lines have accepted the change, and only the bricklayers are still out. Many of the latter, individually, are returning to their work or seeking jobs. The strike was declared on May 1, and a deadlock has prevailed since this time.

Some of the big local work is now progressing again, and there is increased filing of plans at the local building department. With only 560 houses built in the city during the first six months of the present year, the growing interest in the necessity for housing prior to winter is decidedly encouraging. A project in this line to go forward at once, is a block of fifty new dwellings, to be erected at Fifty-fourth Street and Florence Avenue at an estimated cost of \$150,000.

PHILADELPHIA MARKET SLOW

The Philadelphia material market remains stagnant, but with prospects of an early revival in call for important supplies. Common brick retains its now well-established level of \$20 a thousand, delivered. Producers have no intentions to reduce this figure. Face brick is quoted at prices ranging from \$40 to \$55 a thousand, delivered.

Burned clay specialties, including flue lining, sewer pipe and wall coping, have shown an inclination to lower figures, and recently several points reduction have taken place.

Labor Cost in House Building

In the June 16 issue of "Manufacturers' Record" is an interesting two page article on the subject of "Labor Cost in House Building." Details of costs entering into a sample job of a Baltimore dwelling are given, together with a description of all materials entering into the house. The article states:

"The labor cost entering into the construction of a modern, two-story frame, cottage style dwelling is approximately 75 per cent. of the total cost in Baltimore under present conditions. This takes into consideration all of the labor items which are involved in the manufacture of the materials, in their transport by water or rail to their final destination, and in the actual erection of the house itself. The figures on which this conclusion is based are the result of an analysis of production costs in several industries engaged in the manufacture of various building materials and from figures representing actual building costs today.

"The actual cost of assembling and fabricating the materials into the completed house after they have been delivered on the building site is 35 per cent. of the total cost of the dwelling. The cost of lumber, building materials and necessary supplies of all kinds is approximately 45 per cent. Overhead and profit is about 15 per cent. and incidental expenses such as building permit, insurance, water meter, etc., amount to about 5 per cent.

"The supplies delivered at the building site for use in house construction in each case represent the finished product of some manufacturer. For instance, in order to determine the actual cost of lumber, its value on the stump must be considered. The statement of the Southern Pine Association for the month of February, 1921, shows an average cost of producing and shipping per thousand feet of lumber of \$24.22, and this does not include interest on loans or invested capital, while stumpage including purchased logs averages \$5.41. Other items in the final cost of lumber are milling, \$5.79; total manufacturing, \$12.76; general and administrative, \$2.92; depreciation, \$1.34; shipping and selling, \$1.79; making a total cost without stumpage of \$18.81. Hence, the stumpage value is approximately 22.33 per cent. of the total cost. Similarly, other materials may be traced back to their original state, and in every instance labor figures prominently, and the overhead cost of manufacturing and profits accrued must be considered.

"A Baltimore brick manufacturer advises the 'Manufacturers' Record' that in the cost of producing and delivering brick, upwards of 90 per cent. of the total income for the year 1920 went towards labor, plant operations and upkeep. However, the output for the year exceeded sales and the labor cost was necessarily high compared with receipts, but for an average year's operation the manufacturer estimates that labor costs, plant operation and upkeep, approximate 85 per cent. of the total income."

* * *

Brick Road Makes Perfect Record

The experimental road south of Columbus, Ohio, built to test the wearing qualities of various road-building materials has been subjected to a thoro examination by J. R. Marker, secretary-engineer of the Ohio Paving Brick Manufacturers' Association. The examination showed that only two of the twenty-one different sections have retained their identity. These are the sections constructed of brick and asphalt. The road was built under the supervision of Mr. Marker when he was Highway Commissioner in Ohio. It is announced that the cost to the state for repairs on the cement, macadam and petrifalt types has been about \$1,500 per mile each year and in 1917 the repairs aggregated \$3,000 per mile. The Ohio Highway Commission has been advised of the result of the investigation.

CURRENT PRICES *of* COMMON BUILDING BRICK DRAIN TILE *and* HOLLOW BUILDING TILE

THE NUMBER of changes of prices in this month's list is not as great as in previous months, indicating that reductions in prices are slowing up somewhat. Of the forty-two changes shown, twenty-eight are on items that reported changes last month, showing that in most places the prices are not fluctuating very much. Last month Utica showed a reduction in the price on drain tile and this month the price is a little higher than it was before that reduction.

In all there are only eight changes in the prices on drain tile.

Hartford, Conn., shows the largest decrease in the price of common brick, and Richmond, Va., and Wilmington, Del., also show \$5 and \$4 reductions. The price at Scranton, Pa., is interesting, as the decrease this month is just a little more than the increase last month.

The changes in prices for hollow tile are mostly downward, but Rochester shows a very large increase on a tile a little out of the ordinary.

	Common Brick Per M	Drain Tile (4") Per Ft.	Hollow Tile (5x8x12) Per M
Portland, Me.	32.00	.12	
Boston, Mass.	18.00	.08525	68.50
Providence, R. I.	28.00	.16	
Hartford, Conn.	17.00*	.08	
New Haven, Conn.	25.00	.10	
New York City.....	17.50	.13	
Albany, N. Y.	24.00	.09	200.00
Utica, N. Y.	22.00	.0745	
Syracuse, N. Y.	20.00	.07	135.00
Oswego, N. Y.	30.00	.06	
Binghamton, N. Y.	22.00	.06	
Elmira, N. Y.	30.00	.09	
Rochester, N. Y.	18.00	.06	250.00†
Buffalo, N. Y.	25.00	.055	118.00
Jamestown, N. Y.	35.00	.085	120.00
Allentown, Pa.	19.50		111.20
Erie, Pa.	25.00	.0525	80.00
Philadelphia, Pa.	20.00	.15	
Pittsburgh, Pa.	20.00	.06	
Reading, Pa.	20.50	.07	
Scranton, Pa.	17.00	.08	
Newark, N. J.	21.00	.09	120.00
Paterson, N. J.	20.00		
Trenton, N. J.	20.00	.10	
Wilmington, Del.	22.00	.10	90.00
Washington, D. C.	22.00	.08	130.00
Baltimore, Md.	25.00	.07	125.00
Norfolk, Va.	18.00	.08	160.00
Richmond, Va.	20.00	.08	
Huntington, W. Va.	18.75	.075	85.00
Fairmont, W. Va.	30.00	.06	100.00
Wheeling, W. Va.	23.00	.06	100.00
Atlanta, Ga.	12.50**	.09	87.60
Miami, Fla.	25.50	.10	160.00
Tampa, Fla.	18.00		120.00
St. Petersburg, Fla.	18.00		120.00
Louisville, Ky.	19.00	.045	110.10
Lexington, Ky.	18.00	.08	100.00@
Memphis, Tenn.	14.50	.055	100.00
Nashville, Tenn.	18.00	.08	111.20@
Birmingham, Ala.	23.00	.07	116.00
New Orleans, La.	15.00	.075	
El Paso, Tex.	16.00		90.00
Houston, Tex.	18.50	.13	103.10@

	Common Brick Per M	Drain Tile (4") Per Ft.	Hollow Tile (5x8x12) Per M
Dallas, Tex.	20.00	.15	112.50
Topeka, Kans.	35.00	.065	115.00
Little Rock, Ark.	12.50*	.10	
Oklahoma City, Okla.	18.00		93.00
Cincinnati, Ohio	18.00*	.0708	68.00
Cleveland, Ohio	15.00	.047	58.00
Columbus, Ohio	18.00	.055	
Toledo, Ohio	16.50	.06	85.00
Detroit, Mich.	17.00	.06	79.00
Evansville, Ind.	14.00	.03	70.00
Fort Wayne, Ind.	18.00	.05	95.00
Indianapolis, Ind.	17.00	.06	85.00
South Bend, Ind.	20.00		115.00
Terre Haute, Ind.	18.00		
Bloomington, Ill.	22.00	.05	100.00
Chicago, Ill.	12.00	.06	75.00
Moline, Ill.	19.00	.085	70.00
Peoria, Ill.	16.00	.0697	63.75
Green Bay, Wis.	14.00	.04	107.00
Milwaukee, Wis.	16.50	.06	120.00
Grand Rapids, Mich.	18.00		
Minneapolis, Minn.	18.00	.07	100.00
St. Paul, Minn.	18.00	.07	100.00
Davenport, Iowa	20.00	.07	123.00
Des Moines, Iowa.	22.00	.08	85.00
Sioux City, Iowa.	19.50		90.00
Kansas City, Mo.	22.00		100.00
St. Louis, Mo.	17.00	.08	85.00
Lincoln, Neb.	17.00	.08	73.50
Denver, Colo.	14.00	.08	85.00
Butte, Mont.	21.00		15.00\$
Los Angeles, Calif.	15.00	.05	100.00\$
San Diego, Calif.	20.00‡	.105	120.00\$
San Francisco, Calif.	18.50	.05	112.00
Portland, Ore.	19.00	.085	100.00
Seattle, Wash.	19.00	.072	110.00
Cheyenne, Wyo.	18.00		
Winnipeg, Man.	19.00	.13	181.00
Toronto, Ont.	18.00	.08	
Halifax, N. S.	22.00		
Quebec, P. Q.	16.50	.065	

*Hartford, sold by mfrs. only; Little Rock, Cincinnati, f. o. b. cars.

‡Carlot rate, San Diego.

¢Erie, drain tile, per C.

£Boston, hollow bldg. tile, per ton.

££Houston and Dallas, same price applies to Interlocking tile.

\$Los Angeles, Heath tile; San Diego, sizes 4x12x12 and 6x12x12. Butte, per ton at yard.

@Hollow tile, Lexington, Nashville and Houston f. o. b. cars.

**Common Brick, Atlanta, f. o. b. Atlanta.

†Hollow Tile, Rochester—6 cell.

Editor's Note.—The prices of the commodities listed above are reported as delivered on the job, and are, therefore higher than the plant prices. These prices are obtained from a sister publication, **Building Supply News**, and are sent to this paper by dealers in the various cities listed. **Brick and Clay Record** will appreciate any corrections. The prices marked in heavy type denote changes from last list.

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

A LABORATORY OPEN TO ALL



TO FURTHER the interests of the clay industries and to give the earnest student a place where he may express his ideas, James H. Hill, president of the Alberhill Coal & Clay Co., has opened a laboratory at Griffith Avenue and Alhambra Street, Los Angeles. This is one of the most inspiring work shops in all industrial California. It is offered free to anyone wishing to experiment and such bodies as the United States Government, thru Mr. Van Barnevilt, Director of the

Bureau of Mines Experiment Station, Tucson, Ariz.; directors of the big school system of Los Angeles; Homer Glidden, of the Glidden-Batchelder Tile Co., and others are making themselves at home there and are enthusiastic over the generosity and broad mindedness that has made their work possible.

Each student or investigator is provided with a locker for his particular effects; he has only to make known his requirements and they are furnished by Clayton R. Rogers, head of the plant, who also stands ready to render technical advice and aid where needed and sought. Among those in the staff of the laboratory is a man who was head of a big ball-bearing manufacturing plant in the East.

TURNING ALBERHILL INTO INDUSTRIAL CITY

In another plant of the Alberhill chain are two young technical graduates of an eastern university who got the Alberhill fever and worked and walked their way to the coast, when Mr. Hill at once found a place for them. "These are the kind of men I want," he declares. In an address before the University of Southern California, Mr. Hill told what all are interested in, vitally: Feeding, clothing, and housing the people. Along these lines, Alberhill is being fast turned into an industrial city.

In this laboratory the electric furnace proved the Curtis theories for the vitrefrux manufacture. At the present time research is going on to prove the insulator values of local clays. Clays from all over Southern California are being scientifically tested, with gratifying results. A solid foundation has been laid for the investment of capital in this development of the clay industries and reasonable certainty assures the speedy realization of plans already under consideration.

John C. Beswick, supervisor of State Vocational and Industrial Education and member of the California State Board of Education, in Bulletin No. 23-C, says:

FINE QUALITY CLAY AVAILABLE

"When public opinion demands a useful place for art, we shall have the greatest industrial era ever known." In mentioning the vast natural resources of California, clay is featured and he adds that the skilled designer creates articles one hundred times exceeding in value the raw material. He adds: "The clay beds furnish a fine quality of clay for the manufacture of brick, pottery and tiles. Some of California's art tiles are making a national reputation, largely due to artistic merit—furnishing an excellent example of the value of art applied to raw materials. The same holds good of pottery and its possibilities."

This authoritative statement is right in line with Mr. Hill's purpose in establishing the laboratory to which the only key is an earnest and honest desire to learn and experiment.

One of the most enthusiastic and hardest working men in the laboratory is the famous architect, Homer Glidden, partner of Mr. Batchelder, designer of the tile that bears his name. He bends eye and ear toward the kiln in which the tiles are burned and he is more interested in what will come forth than in anything else.

LABORATORY OPEN TO ALL

A teacher of ceramics in the Los Angeles High School takes her class to the laboratory at fixed periods and they are a most eager and interested aggregation. She has a large locker fairly overflowing with the multiplicity of things used by the members of her group. Along this line, Mr. Hill speaks of the possibilities of education along all lines, thru motion pictures. "Complex operations can be illustrated and analyzed



At Work In the Laboratory at Alberhill, Cal. Completing an Art Tile Under Direction of the Instructor.

as in no other way and pupils can be shown the movement of machines or hands, over and over again, until they catch it," said he. In his talk before the Southern California University, he made this pertinent remark:

"Trained workers are what this great industrial movement hangs on. The bulk of the population is earning its living by

the work of its hands and we have to look to these for our output of the multiplicity of articles that make life worth while. The girl and boy of today are the producers of tomorrow and this again brings to mind the Alberhill idea—the application of vocational training to the clay industry.”

Mr. Hill's little daughter, a sophomore in the high school, last year designed an attractive Christmas card. Mr. Hill had it modeled in clay and it is a highly decorative tile. The design shows a youngster on the back of a reindeer.

Miss Helen Linsley, a dressmaker who is a natural designer, visited the laboratory and while there was given the opportunity to express an idea in clay. She had never handled the material before but in an incredibly short time she had modeled the head of an Indian chief. The face is wonderfully strong and dignified—a typical chief of Cooper's time. The war-bonnet stands out, a fitting background, and the whole, tinted to resemble old bronze, make handsome and rich looking book-ends.

OFFER PRIZES FOR ATTRACTIVE DESIGNS

Prizes are being offered in schools and to young persons for designs submitted and found available. Clays are given them, ready for use. These are mixed with glycerine or oil to keep them pliable and moist, for clay thus treated may be worked over and over again.

In the laboratory is a model of a marmalade jar for the Yellowstone Park Hotel. The jar is simple in design and bears in relief a bear hugging a young girl. On the cover of the jar a knob is fashioned to resemble a tiny cone. The order runs up into the thousands.

Another plan for intriguing the imagination of youth is a box of miniature hollow tiles in all colors. These are given the boys and girls of the schools and the ones who bring in acceptable designs built from them, will receive prizes. The contest promises to be a lively one. The glycerine treated clays and these hollow tile will probably be sent out to schools thruout the country later.

The laboratory is a busy place. In one department workers are busy molding cups and bowls by a process that looks like magic to the uninitiated but to the worker is simply molding clay in a desired shape. Handles to these cups are pressed



The Laboratory Kiln. Students Are Also Taught How to Manipulate the Fires to Secure Best Results.

out and later are added to the cup with a little liquid clay, the surplus and the rough bits that adhere to the edges while under pressure being removed by a cloth dipped in water.

LABORATORY HAS LARGE KILN

Vases and jars were being made by what is known as the slip method. Wet clay is poured into a plaster mold where

it is left for a certain time after which the mold is reversed and the surplus clay poured out. Shortly afterward the mold is opened and there is a perfectly modeled article of the thickness desired. The plaster absorbs water from the clay and sufficient clay clings to the sides when the mold is reversed to form the vase or jar.



One Corner of the Laboratory. An Expert Potter Giving Instructions While the Laboratory Assistant Is Preparing Clay for Experiments.

In the yard of the laboratory an immense kiln is in full swing. It heats gradually, attaining 2,400 deg. F., after which it cools in the same way, the whole operation taking several days. A skilled man is in charge and watches the varying flame with an understanding eye.

From the laboratory, clays are being shipped in small canvas bags all over the United States. One of the outstanding opportunities for this industry is the cheap freight rate and the possibility of distribution by the Panama Canal. The whole industrial program is being speeded up by the motion picture industry, which has an annual payroll approximating \$50,000,000, for the making of pictures alone. And the bulk are made in southern California.



Ceramic Imports Rapidly Increasing

Of the \$11,885,086 importations of ceramics into the United States for the eleven months of the fiscal year ending May last, and corrected up to June 17, Japan sent over the Pacific wares to the value of \$3,903,332. This is a new high record for Nippon ware imports and proves clearly that Japanese exporters are finding the United States a fertile field for the sale of their ceramic merchandise.

For the month of May last, Japan shipped ceramic ware to the United States to the value of \$290,431, and for the corresponding month in 1920 this business amounted to \$302,760, or a loss in business of \$12,329 between the two months covered in the report.

As the year advances, however, it is generally believed that the receipts from Japan will increase, at least up to September, for it is not considered likely that heavy stocks will be received after that time, on account of the time required for American distribution for the fall and holiday trade thru American import agencies.

Japan is shipping the United States both plain white and decorated dinnerware, and it is a fact that American import houses are now employing decorators to decorate the Nippon white.

It must not be overlooked, however, that Germany is rapidly creeping up to that point where it will be among the leaders in exporting ceramics to America. Its business is now far ahead of France, and is close on the heels of England, which is the second largest exporter of ware to this country for the last fiscal year.

Germany for the last eleven months ending May last sent over to the United States ware valued at \$1,186,508, and for the month of May last its exports to the United States totaled \$173,062, which for the month of May proved to be the third highest amount exported to the United States by any country. England for the month of May last sold the United States ware valued at \$286,925. In May, 1920, England sold the United States ware valued at \$301,331, while Germany in May, 1920, shipped over wares valued only at \$27,864. This latter record of Germany, when compared with the shipments from Germany of \$173,062 for May last, proves clearly that the German pottery manufacturer is making a big play for American business.

France is not doing the business with the United States that it did in former years. For 11 months ending May last its shipments of ceramics to the United States were valued at \$686,472, and for the month of May last its business has been placed at \$65,561. When compared with its May shipments in 1920 of \$46,101, it is readily seen that the increase has been very slow, and not as active as the records of Japan and Germany show.

For the eleven months ending May, 1919, ceramic ware imported into the United States was valued at \$5,801,035, and for the same period ending May, 1920, this business increased to a total record of \$7,538,207. Then for the eleven months of the last fiscal year ending May 31, these imports from all countries soared to \$11,885,086, or \$4,347,279 increase during the same period.

The average valuation of an American kiln of glaze ware, which contains approximately 2,400 dozen pieces, has been conservatively placed at \$3,000. With an increase of imported ware for the last eleven months of \$4,347,279, the volume of ware imported therefore represents the output of about 1,449 American kilns—lost to American pottery manufacturers and pottery workers.

In May, 1920, the valuation of imported ware was placed at \$809,133, and for May last the valuation increased to \$1,007,379.

* * *

Seek to Cut Down Lead Poisoning

An investigation begun in 1919 at the request of the Brotherhood of Operative Potters in regard to lead poisoning has resulted in some interesting findings and the recommendation of precautionary measures. Ninety-two potteries in New Jersey, Ohio, Pennsylvania and West Virginia, employing 21,000 persons, approximately fifty-three per cent. of the pottery workers of the United States, were investigated.

The following is a part of the report submitted to the United States Public Health Service by Consulting Hygienist Bernard J. Newman, Dr. William J. McConnell, Dr. O. N. Spencer and Statistician F. N. Phillips:

"The entrance thru which the largest part of the lead is received was found to be the stomach," says the report, "as the lead was inhaled as dust, retained in the nasal pharyngeal cavities and later swallowed with mucus, saliva and food. The chewing of tobacco, eating food contaminated with lead dust and carelessness in personal habits, such as wiping the lips and mustache with glaze-covered fingers, are contributory means toward the entrance of the lead into the body.

"Lead poisoning may be expected to disappear when lead-

less glaze is used. The adoption and use of leadless glazes is not impossible, for they are used now satisfactorily by European potteries. Certain objections, however, which have prevented their use in America, can at present be overcome only by radical changes in the manufacturing and firing methods. However, great improvements toward the decrease of lead poisoning can be brought about by the adoption of fritted lead glazes, as it would only be necessary to employ two or three men to prepare and frit the glaze against the present methods now employed, whereby large numbers come in contact with the lead glaze, either in its preparation or its use. Methods and formulas for making proper frits are given in the report.

"The number of cases of poisoning found in the various occupations of the pottery trade does not alone establish their relative hazard, for this must be considered in the light of numerous modifying factors. The investigation, for instance, showed that the number of cases of lead poisoning increases with age of the workers, with their relative years of exposure and with the length of the work-day. It showed also that poisoning is more prevalent among the men than among the women; but this was shown to be due to the fact that the men had been exposed for about three times as many years as the women. It showed also that poisoning was more prevalent among workers who eat in the workroom or drink from vessels used in the workroom, but not properly covered, and in plants where the toilet facilities, ventilation and lighting are bad, and in those where the dust counts and percentage of lead in the dust are high.

"The most important recommendations given to the workers who are really anxious to protect themselves follow: Always eat a good breakfast, drink milk; never eat or drink in the workroom, and never drink from uncovered containers kept in the workroom. Never wear street clothing and shoes in the workroom; never take work clothes home, and keep the work clothes and street clothes in separate sections of the locker. While at work do not chew tobacco or gum; do not spit on the floor; do not wear beards; do not stroke mustache with glaze-coated hands while at work, and do not put fingers, if covered with glaze, on the lips or in mouth. Keep hair covered in the workroom. When quitting work wash face and hands with hot water; clean finger nails and rinse out mouth. Avoid creating dust; insist that only wet sweeping and dusting be done, and avoid spilling glaze, as it will create lead dust."

* * *

Onondaga Pottery Celebrates 50th Birthday

As one of the features of the golden birthday party of the Onondaga Pottery Co., Syracuse, N. Y., which was marked by a picnic of its 900 employes July 20, the company announced that within thirty days ground will be broken for its new mammoth factory on Court Street.

Plans for the development of the Onondaga Pottery interests, as completed, are most extensive. The company has taken title to a 300-acre tract on Court Street, where the new buildings are to be erected.

The first unit, work upon which will start very soon, will cost in the neighborhood of \$300,000, exclusive of the building site. In all eight buildings are to be erected by the company before the development scheme is concluded. The completed plant will have a total value of more than \$2,000,000.

One of the features of the plans is the construction of one unit which, when completed, will cover about seventeen acres. This is one of the most pretentious building schemes ever developed in this country.

The Onondaga Pottery Co. was founded there July 8, 1871, but the formal birthday celebration of its half century in busi-

ness was delayed a few days. Two hundred automobiles were required to carry the 900 workers and executives from the present factory to the site of the new home where a picnic along the lines of a great family party was held. There was no speaking program, just a day of fun, sport and amusements of all kinds.

Decision to go ahead with the gigantic building scheme is the company's expression of confidence in the future of the industry, as well as its firm belief in the general improvement of business conditions thruout the country.

In fitting celebration of the event of the Onondaga Pottery Co.'s fiftieth anniversary the "Syracuse China News," house organ of the company, has published an elaborate and especially attractive issue. The book is really a history of the life of this large pottery as told by men who have been intimately connected with the company for many years and have watched its growth from infancy.

The history of the Onondaga Pottery Co. is a record of progress from the purchase, fifty years ago, of the Empire Pottery in Geddes, N. Y., to the present distinction of being the largest plant of its kind in the country.

Looking thru the Anniversary Number one is struck with the extremely large number of employes who have been with the company for many, many years. One picture shows a group of 128 employes, men and women, all of whom have been in the service of the company for more than fifteen years and many for more than twenty-five years. That is undoubtedly one of the secrets of the ability of the company to turn out high-grade ware in quantity.

* * *

Prepares Catalog of White House Collection

A new catalog of the china collection at the White House, Washington, D. C., has been completed by Mrs. Abby Gunn Baker, who has had charge of the collection since the time of its inception during President Roosevelt's administration. The catalog is more complete than any other similar work previously prepared. It includes every piece of china, glass and silverware, with each numbered and listed, and card index giving a brief history of the respective pieces.

* * *

Goodwin Accepts New Position

Herbert Goodwin, for the last three years factory superintendent for the Salem (Ohio) China Co., has tendered his resignation, to become factory manager for the Chelsea China Co., of New Cumberland, W. Va. The Salem China Co. is controlled by the Sebring interests, and that firm has not yet announced a successor to Mr. Goodwin.

Mr. Goodwin has long been considered one of the best ceramists identified with the general ware industry. At one time he was manager of a pottery in Mexico. Altho employed in Salem, Mr. Goodwin has continued to maintain his residence in East Liverpool. He is associated with the American Ceramic Society and is known to many of its members.

* * *

Plan to Install New Machinery

The Inland Empire Pottery Co., of Spokane, Wash., has recently completed plans for the installation of two kilns to cost \$25,000. The company is also planning the installation of a quantity of new machinery, as well as the addition of more storage space to accommodate a large supply of stocks. The Inland Empire Pottery Co. was organized nearly two years ago. During 1920 the company manufactured and sold more than \$50,000 worth of stoneware. There

has been a steady and heavy demand for the company's products right along.

* * *

Organize \$50,000 China Company

The China Mercantile Corporation, New York City, has been formed with a capital of \$50,000 to deal in chinaware. The company is headed by E. G. Hinrichs, L. N. Lau and M. Marks, 19 Park Place.

* * *

Pottery Official Resigns

William Burgess, Trenton, N. J., recently appointed by President Harding as a member of the Tariff Board, has resigned as vice-president of the United States Potters' Association. The vacancy will be filled at the annual meeting of the organization to be held at Washington, D. C., the first week in December.

* * *

Terra Cotta Company Finds Business Good

Shipments from the plant of the Indianapolis Terra Cotta Co. are being delayed somewhat because of the loss by fire of one entire kiln of material, about twenty-two tons in all. The company now is bending every effort to get out deliveries as quickly as possible. According to officials of the plant the volume of public construction continues good, and it is for this class of work and for office and business buildings that the company is providing most of its produce. Officers of the company say that now some of the projects that were scheduled for this year are being laid over until 1922.

* * *

File Plans for New Building

The Porcelain Enamel Mfg. Co., Baltimore, Md., has filed plans for the erection of a new building on Eighth street, 14 x 54 feet.

* * *

Trenton Potteries to Have Booth at Fair

The Trenton Potteries Co., Trenton, N. J., has secured space at the forthcoming Trenton Fair, and will make a comprehensive display of its sanitary earthenware products.

* * *

Pottery Declares Dividend

The Trenton Potteries Co., Trenton, N. J., manufacturer of sanitary ware, has declared a one per cent. dividend on its non-cumulative preferred stock.

* * *

Increases Dividend to Eight Per Cent.

The Standard Sanitary Mfg. Co., Pittsburgh, Pa., manufacturer of sanitary earthenware products, has declared a quarterly dividend of two per cent. on its common stock, increasing the rate from six to eight per cent. per annum.

* * *

Florida Company Planning on New Works

The Manatee River Pottery Co., Bradentown, Fla., is considering plans for the erection of a new plant on a site to be selected in Orange County.

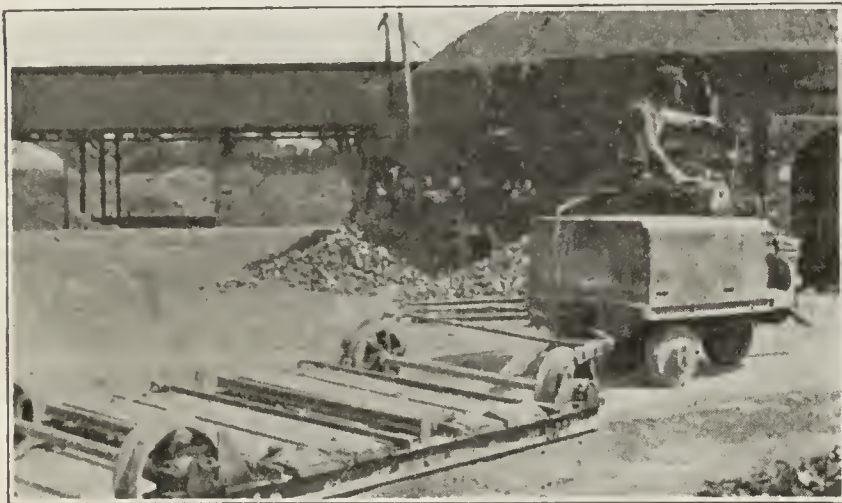
The SUPERINTENDENT

Helpful Hints for Practical Men
Whose Problem is Maximum
Production With Minimum Cost

Novel Use for Storage Battery Truck

A novel and utilitarian use for a storage battery industrial tractor, is that employed by the Streater (Ill.) Brick Co. The truck serves as the means for transporting the dryer car transfer cars from the dryer to the kilns. The transfer trucks operate on tracks as usual, but the tractor will operate anywhere.

It is an easy matter to connect the tractor and the transfer car, and all curves are made with ease. The use of the truck for this purpose is very simple and does the work as good as any other form of locomotion. The cost of operating the



This Electric Truck Can Travel to Any Part of the Plant and Is Extremely Useful.

truck is quite small. The electrical energy required and the cost of charging the battery is but twenty cents a day. One operator can easily take care of transferring the dryer cars and has time for other work besides.

The truck may also be used for hauling coal and ashes, and due to the fact that it does not operate on rails, can make short cuts and go around the kilns to any accessible point. This is a new use for the storage battery truck, and it has been found to be a labor saver on the Streater Brick Co., plant.

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Making Pipe Bushings of Standard Pipe

It is a good thing to know that bushings can be made out of standard pipe. Many pipe fitters don't know that it can

be done. Or, if they know that it can be done they don't know the correct size of drill to use for tapping. I have always known that it can be done and have occasionally made bushings out of pipe, but each time I found it necessary to first look into my handbook for the drill size to use and that is so much trouble that it is frequently easier to go to the store and buy a new bushing.

Recently, tho, it has been very difficult to buy bushings, on account of shortage of all pipe fittings, hence I feel that the following information should be of much value. I have collected all of the data together for all bushings that can be made out of ordinary sizes of extra heavy and double extra heavy piping.

To bush from $\frac{1}{4}$ inch to $\frac{1}{8}$ inch, for example, get a piece of $\frac{1}{4}$ inch extra heavy pipe sufficiently long for cutting the outside thread. Then cut the end off to the desired length, drill or ream with a $\frac{3}{16}$ inch drill (diameter of drill 0.328 inch) and then tap with a $\frac{1}{8}$ inch pipe tap. That's all there is to it.

The table below tells the complete story for all ordinary sizes: Note that in one case, $\frac{3}{8}$ inch to $\frac{1}{4}$ inch, the internal diameter of $\frac{3}{8}$ inch extra heavy pipe is such that no drilling is necessary.

Also note that in bushing from $\frac{1}{2}$ inch to $\frac{3}{8}$ inch either extra heavy or double extra heavy piping can be used.

To Bush From	Use This Size of Pipe	Use This Size Drill or Reamer
$\frac{1}{4}$ " to $\frac{1}{8}$ "	$\frac{1}{4}$ " Extra Heavy	$\frac{3}{16}$ " Drill=0.328"
$\frac{3}{8}$ " to $\frac{1}{4}$ "	$\frac{3}{8}$ " Extra Heavy	None
$\frac{1}{2}$ " to $\frac{1}{8}$ "	$\frac{1}{2}$ " Double Extra Heavy	$\frac{3}{16}$ " Drill=0.328"
$\frac{1}{2}$ " to $\frac{1}{4}$ "	$\frac{1}{2}$ " Double Extra Heavy	$\frac{3}{16}$ " Drill=0.422"
$\frac{1}{2}$ " to $\frac{3}{8}$ "	$\frac{1}{2}$ " Double Extra Heavy	$\frac{1}{8}$ " Drill=0.562"
$\frac{1}{2}$ " to $\frac{3}{8}$ "	$\frac{1}{2}$ " Extra Heavy	$\frac{1}{8}$ " Drill=0.562"
$\frac{3}{4}$ " to $\frac{3}{8}$ "	$\frac{3}{4}$ " Double Extra Heavy	$\frac{1}{8}$ " Drill=0.562"
$\frac{3}{4}$ " to $\frac{1}{2}$ "	$\frac{3}{4}$ " Double Extra Heavy	$\frac{1}{8}$ " Drill=0.688"
1" to $\frac{3}{4}$ "	1" Double Extra Heavy	$\frac{3}{16}$ " Drill=0.907"
$1\frac{1}{4}$ " to 1"	$1\frac{1}{4}$ " Double Extra Heavy	$1\frac{1}{8}$ " Drill=1.125"
$1\frac{1}{2}$ " to 1"	$1\frac{1}{2}$ " Double Extra Heavy	$1\frac{1}{8}$ " Drill=1.125"
$1\frac{1}{2}$ " to $1\frac{1}{4}$ "	$1\frac{1}{2}$ " Double Extra Heavy	$1\frac{1}{8}$ " Drill=1.468"
2" to $1\frac{1}{2}$ "	2" Double Extra Heavy	$1\frac{3}{8}$ " Drill=1.72"
$2\frac{1}{2}$ " to 2"	$2\frac{1}{2}$ " Double Extra Heavy	$2\frac{1}{8}$ " Drill=2.187"
3" to $2\frac{1}{2}$ "	3" Double Extra Heavy	$2\frac{1}{8}$ " Drill=2.562"
$3\frac{1}{2}$ " to 3"	$3\frac{1}{2}$ " Double Extra Heavy	$3\frac{1}{8}$ " Drill=3.187"
4" to $3\frac{1}{2}$ "	4" Double Extra Heavy	$3\frac{1}{8}$ " Drill=3.688"
$4\frac{1}{2}$ " to 4"	$4\frac{1}{2}$ " Double Extra Heavy	$4\frac{1}{8}$ " Drill=4.187"

How to Fire Kiln After Oxidation

In firing the kiln following the oxidation period, it is permissible to go at a rapid rate without much danger. Thus, it is usually well to fire the kiln in such a manner as to bring the heat up quickly until a temperature is reached at which proper hardness of the clay is best brought about. Of course, where a clay has a short range between vitrification and fusion, it will be necessary to take care in firing so that overburning does not result. Overburning is usually indicated by the formation of a vesicular structure; that is, the clay becomes filled with small cavities or bubbles which causes it to become weak. The brick also become smaller and misshapen and this is the stage immediately before complete fusion.

The LETTER BOX

A Place Wherein Letters
That Have General In-
terest Are Published and
Commented Upon

Sounding a Note of Hope and Cheer

Dejection, general gloom in regard to the present business situation, and a pessimistic attitude when viewing the immediate future of business characterizes most of the business men today. Most letters, which come to our attention carry a message of despondency rather than a note of optimism and hope, so it is particularly refreshing when one of the latter kind is received. Smith, Emery & Co., engineers and chemists of San Francisco, Cal., recently sent an open letter to *Brick and Clay Record* which was replete with good cheer and sound arguments designed to dispel the glooms. In the hope that it will accomplish something of this sort it is reprinted below:

"For a long time we have been systematically fed on pessimism thru the press, postal channels, trade organizations, the banks and our friends, all trying to prove in one way or another that business, particularly our business and that of the government, has the mollygrubs, doddles, dol-drums or what not. Frankly, we are sick of the diet. The 'worm has turned.' The time-honored 'silver lining' to the cloud is getting so hefty that pretty soon it's going to turn that old cloud foreside to. You know it and we know it. Then why the mollygrubs?

"Now don't call us 'nuts' or some other post-war pet name because we've cut out the pessimism. We are losing a little money, so is everyone else. We knew we were going to lose it, so let us be good losers. Whistle! It's better for the community. If things are not exactly lively in business and we don't know just what to do next, remember the fellow who had hold of the grizzly's tail. He had a near-up problem, fully equal to yours and ours, but history does not say anything about his having let go.

"There's lots of business to be done; it's just around the corner. Why not go after it and help get things started? Try smiling. Attempt a joke if it does sound a little thin and hollow. It may provoke somebody to laugh or smile at your temerity. Laughs and smiles are what we want now. Cultivate the bacillus 'Cheerfulness.' Get out your forgotten warm handshake that used to stir the cockles of your friend's heart. Let us walk around like we had something important to do. What are we afraid of anyway? Bugaboos or goblins? Riley's story about goblins was for little 'Orphan Annie,' not for business men with a world's problem.

"If we have failed to do our share in adjusting prices and wages to where we know they must go, let us do it now—deflate—for 'we are going over' and there is no room for slackers or profiteers, but plenty for the real American, the finest title in the world.

"Give Harding a chance. His politics don't matter. He is President of the United States of America, the greatest country on this old terrestrial globe. Give him a square deal. Give Congress a chance. Get out the constructive ideas that we have a grasp on, and fire them along to our congressmen and senators. They are human and will like it. It will help the country.

"Give the Stars and Stripes a chance to flutter in a real American commercial breeze. We know how! Let's go!"

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New Home Building Organization

In Altoona, Pa., the Blair Home Co. has been organized to erect moderately priced homes within the reach of the average wage earner. The move was a result of a house shortage in that city. Officers of the company are: President, F. Wood Beckman; secretary, Arthur L. Martin; treasurer, John Cree.

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tells the workman at a glance just what the temperature conditions are now, what they have been, and in what direction they are leading. With this knowledge he can readily obtain close regulation—and even inexperienced workmen can do better work.

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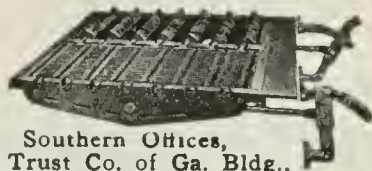
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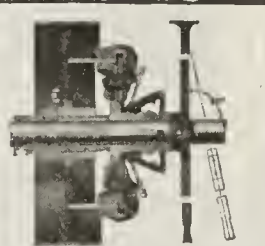
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Cleveland, Ohio

New York Office, 50 Church Street



Hill Friction Clutch Pulley
Smith Type
(Patented)

NO 133

SALEM

ELEVATOR BUCKETS

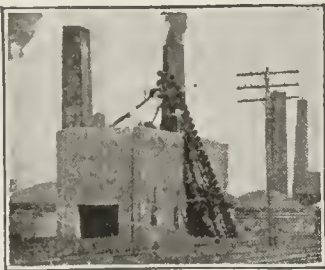
Premium winners in 1880—the best on the market ever since. Absolutely dependable under all conditions. A complete line that fulfills every need. Write for literature and price list.

Acute heel shelf bucket with beveled end.

Readily handles mud, ore, coal, broken stone, etc. Elevates at low angles and without a boot.

Mullins Body Corporation
Stamping Dept. "A"
101 Mill Street Salem, Ohio
Successors to The W. J. Clark Co.

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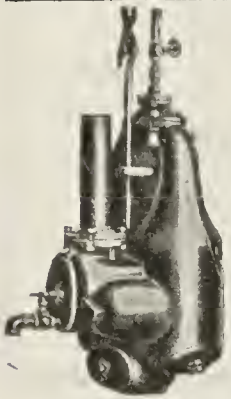


Elevating and conveying equipment. Steel and malleable buckets furnished in all sizes and shapes. Chain, sprockets, etc.

Let us quote you on your requirements.
The Columbus Conveyor Co., Columbus, O.

PULSOMETER

STEAM PUMP



Will keep your pit free from water. Pumps continuously without attention or adjusting. Handles any fluid up to 40% solid when agitated and is particularly suited to Clay Plant needs.

NEEDS NO LUBRICATION!
Ask us for proof of performance

PULSOMETER STEAM PUMP CO.

Executive Offices, 224 W. 42nd St., New York, N. Y.
Distributors in all principal cities

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OUR FACTORY
THE LARGEST
IN THE WORLD
DEVOTED TO
CAR BUILDING
ALONE
CARS
FOR
EVERY MINING
AND
INDUSTRIAL
PURPOSE
CATALOGS ON
REQUEST
THE
WATT MINING
CAR WHEEL
CO.
BARNESVILLE OHIO

QUESTIONS

A Two Cent Stamp May Bring
You Advice That Will Stop
a Waste, Improve Your Ware
or Lower Your Production Cost

Address all communications intended for this department to "Editor Questions and Answers," care of "Brick and Clay Record," Chicago.

Hard-Burning Top Courses in Up-Draft Kiln

980. *Mississippi*—We burn our brick in up-draft kilns, and our ware has considerable shrinkage. Unless we use cinders or dirt on top of the kilns, it is difficult to get the top courses burned hard. One reason for this, we think, is that the heat leaves too fast on the top after cutting off the fires. We burn with oil. We wonder if there is anything available like sheets of asbestos made for the purpose of putting on the top after the heat is raised to prevent it from going out too fast.

This question was printed in the July 12 issue of *Brick and Clay Record* and the superintendent of a large brick manufacturing plant in Maryland, where up-draft kilns are used to burn brick, has sent in the following suggestions:

"I do not know just what you call 'a lot of shrinkage.' I know that some clay in Mississippi does not shrink at all, and others, quite a little.

"However, if a kiln set forty to forty-five courses high does not shrink over fourteen to sixteen inches, I do not see how that would prevent burning the top hard.

"I have found one thing in that part of the South—that the platting is often very loose, which is a mistake.

"You say that you use dirt or cinders on top. If this produces the results you want, I would suggest that instead you put on an extra course of platting.

"I do not know how you plat your kilns, but would suggest one course of platting across the top course of brick, laid one inch apart; the next course laid across this, and of all whole brick and close. The third course, I would not put on until kiln was hot all over the entire top and the fire beginning to show thru the top. This should be laid so as to break the joints in second course as much as possible.

If you prefer, you can have about eighteen inches all around the outside of the kiln with just the two courses of platting; then platting all the rest of the kiln as tightly as possible.

"At first thought, this may seem like a hot job for the men, but if they walk on the brick just laid down, which are not yet hot, it is not such a hot job as it seems.

"Of course, I think you could get asbestos sheets to cover the top, but they would be very expensive and would not stand handling and re-heating very well.

"You will find the extra platting will hold the heat, and I think will save you fuel.

"Care should be used, after tightening the top, to not get the arches too hot, as the heat not being able to escape so fast, the same will be retained in the kiln, and you will not need the same amount of fuel to keep up the heat."

✻ ✻ ✻

What Produces Black Coloring on Brick?

981. *Wisconsin*—We wish to purchase a transparent glazing slip or sand which will melt at a temperature around 1,000

and ANSWERS

Best Authorities in Every Clay working Branch Are Called Into Consultation—Their Advice is Free to You, Thru These Columns

Should a reply be desired by letter, send a stamped and addressed envelope with your question, and it will be answered promptly.

deg. F. Will you be so kind as to inform us who manufactures glazing materials?

Also, what is the metal-like appearing material which is mixed into the clay in many rough textured facing brick? We have reference to the black patches which seem to be some metal which has melted into the clay during the burning.

The above question, together with an answer, appeared on page 68 of the July 12 issue of *Brick and Clay Record*. This item was read by Chas. W. Massie of the Hy-Grade Manganese Co., who volunteered the following information:

"We note in the issue of July 12 of your paper in the question and answers section, a Wisconsin manufacturer wishes to know what is the metal like appearing material used in the clay to color the rough texture brick. And we note further your answer as to the iron and the manganese being used.

"In this connection, we have found that there is very little iron used except in cases where there occurs a natural iron in the clay and very often even in this case manganese is used as the manganese fuses at a lower temperature than the iron and by adding the manganese the right amount which gives the desired shades can be controlled. Lots of clays will not stand a temperature which is required to bring out the iron spots.

"Manganese is used to give grey, grey speckled, buff speckled and in red brick very often to give a darker shade which is more even and more easily controlled than the dark shade gotten by flashing."

* * *

Wants to Reduce Backing Brick

983. *Missouri*—I would like to have some information in regard to setting brick in the old wind-guard up-draft kiln. The way we have been setting the kiln in the arch is giving us too many backing-up brick. We have been setting the arch twelve brick high, starting from the eighth with the overhanger, and then setting five over two on top, giving it loose setting on the sides of the cobhacking corners.

Would the arches stand the heat if I were to drop the overhanger from the fourth or the sixth brick, thereby making the arch smaller, which would give me more face brick?

Any information that you will give me will be appreciated.

A man who has had considerable experience in burning up-draft kilns advises as follows:

"It would not be advisable for the Missouri plant to build smaller arches. They have been setting the arches twelve high, but thirteen would be better, starting with the overhang from the ninth brick instead of the eighth.

"In reducing the size of the arch he would be reducing the size of the only combustion chamber there is in an up-draft kiln, and there is not any too much room even when the arch is set thirteen brick high. If a higher percentage of face brick is desired, it might be possible to obtain it by setting your brick higher.



CRESCENT BELT FASTENERS

"Make Good Belts Give Better Service"

Once on, Crescents are on to stay. A Crescent joint will outlast the most durable belt. No part of belting is punched out or weakened. Maximum strength maintained. Belt runs same as endless on pulley side. No knocking or thumping. Noiseless. Joint hugs pulley. Full power transmission insured.

Write for new Booklet W on Increasing Belting Efficiency.

CRESCENT BELT FASTENER CO., 381 Fourth Ave., New York
 Canadian Branch: 32 Front St., West, Toronto, Canada
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Why Use Coal For Fuel?

Write for catalogue.
Established 1905



"Heat Tells"

It is expensive besides taking longer to burn your ware, and considerable more labor.

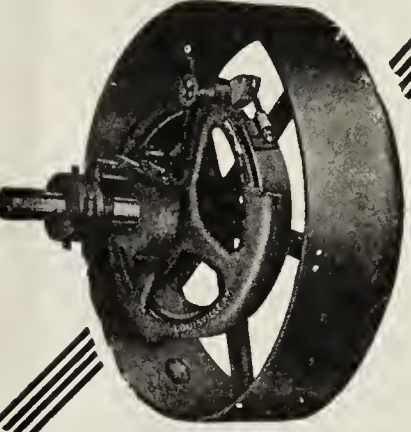
USE OIL

The Schurs Kiln Burners in your kilns mean—Quick Burns, Better Colors, complete control of fire and

Great Labor Saving

Schurs Oil Burner Company

5330-5332 Santa Fe Ave., Los Angeles, Calif., U. S. A.




Performance

Caldwell Friction Clutches are giving years of dependable, trustworthy service. Their simplicity, ease and perfection of adjustment, and freedom from breakage assure thorough satisfaction. There are only eleven parts, all designed to have their greatest strength in the direction of greatest stress. Constructed like an automobile brake, a flexible, Raybestos-lined band gripping the entire circumference of the friction ring and transmitting all the power evenly, quickly, surely, Caldwell Clutches combine strength and dependability with unrelenting, life-long service.

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W. E. CALDWELL CO.
Incorporated
400 E. Brandeis St., Louisville, Ky.



FRICION CLUTCHES

LESCHEN

WIRE ROPE

Back of every Leschen Rope are many years of manufacturing experience. We make high grade wire ropes for all purposes. For heavy service of all kinds we recommend HERCULES (Red-Strand) Wire Rope. If you will tell us how you use wire rope we shall be glad to suggest the correct rope for economical results.

Established 1857

A. LESCHEN & SONS ROPE CO.

St. Louis, Mo.

New York

Chicago

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FIRE BRICK

FOR KILNS RIGHT QUALITY

*Write us and we will tell you
about them and submit prices*

The Evans Builders Co.

Fourth and Plum Sts.,
Cincinnati, Ohio

921 Fifteenth St., N. W.
Washington, D. C.



Boss Ten-Hour Dryer



Brick and hollow ware dried in TEN HOURS with either WASTE HEAT or EXHAUST STEAM. One-third less cost to build—two-thirds less cost to operate.

Boss System of Burning

50% less coal consumed and 50% less time required in burning each kiln. Less kilns required to meet a certain given capacity than when burning the old way.

Dryers and kilns designed and built—write us regarding your drying and burning difficulties.



J. C. Boss Engineering Co.
Elkhart, Indiana



The Spirit of 1921 "Lower Production Costs"

Associations in the Clay Working Industries have adopted this slogan.

Every Clay Manufacturer should have a copy of "Clay Plant Construction and Operation," in his library. It is a timely text book containing a wealth of practical information on Labor Saving equipment, efficiency methods, etc.

The price of this handsomely bound volume is \$4.00 prepaid.

You can't afford to be without a copy. Send for it today.

Brick and Clay Record

610 Federal St.

Chicago

"Up-draft kilns have been successfully burned with the setting fifty-four high and most of the plants could set from four to six courses higher than they do and still get good results. In my estimation, setting forty-six high is good practice.

"An up-draft kiln is an up-draft kiln and always will be, and it is folly to expect better results than this type of kiln can produce. If a plant has a market for a higher class of brick than can be produced in an up-draft kiln, the plant should use a number of down-draft kilns to take care of the business.

"If the plant has a sand bank at hand they can add sand to the clay in the machine to make the brick for the first fifteen courses, but this is some trouble and requires planning ahead to have the dryer or dry racks work out correctly.

"Another stunt which helps considerably is to sand the setting in the arches even up to the twentieth course. A great number of plants use no sand when they set the kiln and if they would throw or sprinkle sand on each course before setting the next course, a much better brick in the bottom of the kiln would be obtained."

The superintendent of a brick plant in Maryland has offered the following suggestions for setting in the wind-guard type of kiln:

"Setting in wind-guard or similar kilns, if properly done, should give good face brick, even in the arches. I do not believe it would be wise to reduce the size of the arch.

"Starting overhanger in ninth course, I have four overhangers and load practically all the arches for face brick. If the following method is adopted I think good brick will be obtained from the arches:

"This type of kiln usually sets three and one-third benches. Set first, second, fourth, fifth, seventh and eighth courses in pairs and squarely over each other. Set third, sixth and ninth courses tight clear across kiln. Set first, second and fourth overhangers in pairs and squarely over each other, and the binding course squarely over last overhanger. Set the middle brick in bench in pairs and squarely behind the pairs in one fire bench. Set the third, sixth, ninth and twelfth courses in middle of benches stretchers. Set your extra third brick in middle bench, next to opposite fire bench, and carry it up tight to the top of bench, except the two bottom courses, which set two inches apart at ends. This burns bottom brick harder than if set tight.

"This method lets the fire work in thru the middle bench and up into kiln and saves the arches from being overheated."

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Advertise "Guaranteed Claycraft" Ware

A vigorous campaign of advertising to increase sales of drain tile, hollow building tile and brick is being conducted by a number of manufacturers in Ontario, Can., banded together for this purpose. There are nine manufacturers associated in this advertising campaign. They are Aaron Hill, Essex; Hallatt & Sons, Comber; Alfred Wehlann, Cairo; Wm. Hallatt, Merlin; Erie Clay Products, Ltd., Port Dover; Armstrong Bros., Fletcher; London Clay Products, Ltd., London; Tilbury Brick & Tile Co., Ltd., Tilbury; H. C. Baird Son & Co., Ltd., Parkhill.

This association, of which M. M. Dillon, of Port Dover, is secretary, advertises its products under the name "Guaranteed Claycraft." A recent advertisement of the association advises the farmers of Ontario to take advantage of the offer of the Ontario Agricultural College to have an expert drainage advisor look over the land without cost to the farmer other than the transportation expenses and accommodation while on the job. Undoubtedly this plan of the college will stimulate the sales of drain tile considerably.

IN *the* WAKE of *the* NEWS

Being Brief Mention of a Host
of Interesting Happenings in the
Varied Fields of Clayworking

Edwin B. Gardner Passes Away

Edwin B. Gardner, of the Frederick Brick Co., Kingston, N. Y., recently passed away at his home in Kingston. Mr. Gardner was well known in industrial circles in the Hudson Valley. He was a member of Kingston Lodge, No. 10, F. & A. M., and also of the Kingston Club. He is survived by his wife.

Hackensack Brick Manufacturer Dies

The death of Edwin Schmults, a well-known and influential resident of Hackensack, N. J., occurred very suddenly at his home at Hackensack. Mr. Schmults was for many years in charge of one of the oldest brick plants in the city, a plant which his father, John W. Schmults, established more than fifty years ago. His death came as a severe shock to relatives and friends.

Stoner Visits Columbus

John Stoner, president of the Cincinnati (Ohio) Builders' Supply Co., large dealers in brick and clay products and for several years president of the Face Brick Dealers' Association of America, was a recent business visitor in Columbus.

Returns to Clay Products Industry

H. H. Bishop, of the Southern Brick & Tile Co., of Louisville, Ky., son of T. Bishop, is back with the company again after being away for some months, having been with a road contracting organization in western Kentucky.

Made Manager of Ft. Wayne Brick Co.

A. G. Keller, for the past three years auditor and assistant manager at the plant of the Ft. Wayne (Ind.) Brick Co., was named manager to succeed James E. Ford, at a meeting of the board of directors recently. Mr. Ford left the employ of the brick company to accept the management of the Ft. Wayne Transfer Co.

Fire Brick Official Active in Other Fields

L. U. Nickell, president of the Fulton (Mo.) Fire Brick Co., who has been active in civic affairs of that city, was recently elected president of the Fulton Commercial Club and also chairman of the executive committee of the Red Cross organization in Callaway County, two of the most important positions in the city. His greatest achievement lately was to help manage the big barbecue at the monster Fourth of July celebration in Fulton, at which 100 sheep were barbecued. It was the biggest stunt of the kind ever pulled off in the state, and 7,000 people from this and adjoining counties were present.

Mr. Nickell has outlined some big things for the Commercial Club this year and is working on a number of projects at present. Not long ago he supervised the painting of telephone poles along the Old Trails Road thru this county, as a means of helping tourists keep the right road.

Schaffer Poidometer

The only machine for complete efficiency in the proportioning of clay and water. It not only delivers both solids and liquids, but records the weight handled, regardless of ranges in specific gravity, of moisture and sizes of material.



THE SCHAFFER is speedy—delivers from 1½ to 21,000 lbs. per minute, according to adjustment. It is 99.75% accurate, and never needs repairs.

Our engineers are at your service. May we send you our latest catalog?

The Schaffer Engineering & Equipment Co.

2828 Smallman Street

Pittsburgh, Pa.

The Invincible Barrow



This favorite barrow has lost none of its popularity. We furnish them for either brick or sewer pipe and with plain wood, babbitted or spring bearings. They are honestly constructed thruout. On account of increased manufacturing facilities we are able to make immediate delivery.

Write for prices.

TORONTO FOUNDRY & MACHINE CO.,
Toronto, Ohio

In Need of Conveyor Elevating or Transmission Belting?

*Specify
Quaker City Brands
of Course!*

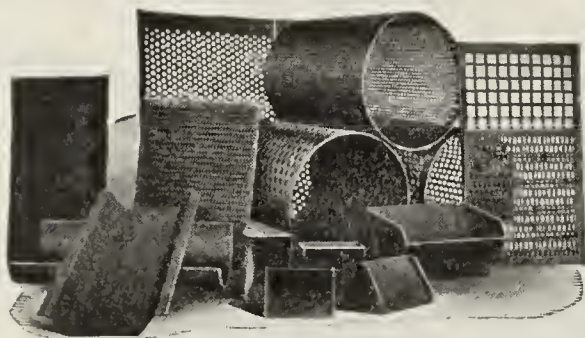
Many perplexing belting problems have been solved by our experts. Probably we can assist you. May we have the opportunity?

QUAKER CITY RUBBER CO.

Main Office and Factory
PHILADELPHIA

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CHICAGO PITTSBURGH NEW YORK

HENDRICK SCREENS FOR ALL PURPOSES



**ELEVATOR BUCKETS
CONVEYOR TROUGH and FLIGHTS
STACKS, TANKS,
GENERAL SHEET and
LIGHT STRUCTURAL WORK**

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NEW YORK OFFICE: 30 Church St.
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Appoint H. F. White Sales Manager

President S. L. Chamberlain, of the Hocking Valley Products Co., Columbus, Ohio, recently announced the appointment of Howard F. White, as sales manager of the brick department. From 1912 to 1920, Mr. White was with the sales department of the company to which he returns. He is well known in the brick industry and for the last year and a half has lived in Northern Ohio. It was also given out that E. B. Francis continues as general superintendent in charge of production of the company's large plant at Greendale, Ohio.

Mr. Chamberlain says that the demand, present and prospective, for Greendale rug brick is so good thruout the United States and Canada for use in national, state, municipal and private buildings that the plant is working at maximum capacity. Columbus offices of the concern are located at 175 South High Street, where Mr. White will have his headquarters.

To Start Tile Plant at Gadsden

The Gadsden, (Ala.), Clay Products Co., recently organized with a capital of \$25,000, will operate a local plant for the manufacture of building tile and kindred products. At a later date, the company will construct a large plant to be devoted to this line of manufacture. Robert Riley is president, and Gordon Hood, treasurer.

Birmingham Putting in New Sewers

The city commission of Birmingham, Ala., is considering the expenditure of \$155,000 for sanitary sewers in the downtown district. It seems probable that the work will be ordered done, and in the event it is this will mean considerable money to the local manufacturers of sewer pipe.

Some of the sewer lines in the down-town section of the city were laid a number of years ago, when Birmingham was much smaller than it is now. Hence the city has outgrown the sewers and large ones are required.

The preliminary estimate of the cost has already been prepared and placed before the city commission. Two plans for the payment of the new sewer lines has been suggested. One plan is to issue bonds, while the other plan is to tax the cost up to the property owners.

Ideal Wall in Alabama

By the use of hollow walls, brick houses of a substantial kind can now be constructed at a reasonable price, according to John W. Sibley, contractor, of Birmingham, Ala., in a speech delivered before the weekly meeting of the Real Estate Board of that city.

"The so-called 'cheap home' is a millstone around the neck of the average man," said Mr. Sibley. "Year by year it grows more expensive to carry. Only the rich can afford to spend hundreds of dollars every two or three years for paint and bear a loss of three per cent. a year for depreciation.

"But now brick comes to the front as never before, because by the new ideal wall all the old advantages of brick are retained and the great added advantage of lowest first cost is realized."

Mr. Sibley also stated that a house could be constructed much more quickly with brick walls, at a cost not to exceed more than ten per cent. additional compared with the cost of wood. He said he knew of one large residence built of brick hollow walls, and that the walls were built in eleven days.

It was pointed out by Mr. Sibley that by using the brick hollow wall six items in the walls of a frame house are eliminated. These being: laths, studding, sheathing, water-proofing, painting and nails.

Alabama at Threshold of Building Boom

The prospects for much building for this fall and next spring is good, owing to the fact that iron and steel industries are now opening up, giving employment to more men at good wages.

Plans are now under way for the largest water power development in Alabama that has ever taken place in any section of the United States before this time.

The Alabama Power Company is to spend \$8,000,000 on the development of the water power on the Coosa river, 50 miles south of Birmingham. This water power is fourteen miles from Verbena, Ala., on the Louisville & Nashville Railroad, the nearest railroad point. The power company is now building a railroad from Verbena to that point, and a town is to be built there. This will require a large number of brick and sewer pipe, Birmingham brick men say.

The water power at Muscle Shoals, which Henry Ford is now asking the government to turn over to him, is only about 100 miles from Birmingham. Should this development take place, it will be of untold benefit to all that section, and will create a very large building boom at Sheffield. The development of this project would also be a boon to the brick manufacturers of the Birmingham district, it is claimed.

Using Fuel Oil in Kilns

Some of the industrial plants at Little Rock, Ark., are using fuel oil from the El Dorado field, replacing coal and gas under the boilers therewith. W. W. Dickinson announced that his company, the Arkansas Brick & Tile Co., changed some time ago and is using oil in its kilns. Mr. Dickinson said the new fuel, used thru pressure sprays, makes a hotter and better fire for kiln use than gas.

Building Plant at Carpenteria

Carpenteria, Cal., is to have a new brick and tile factory, to cost about \$37,000 and to be completed and in operation in about ninety days. The plant will employ from fifteen to twenty men at the start.

New Plant for Tile and Brick

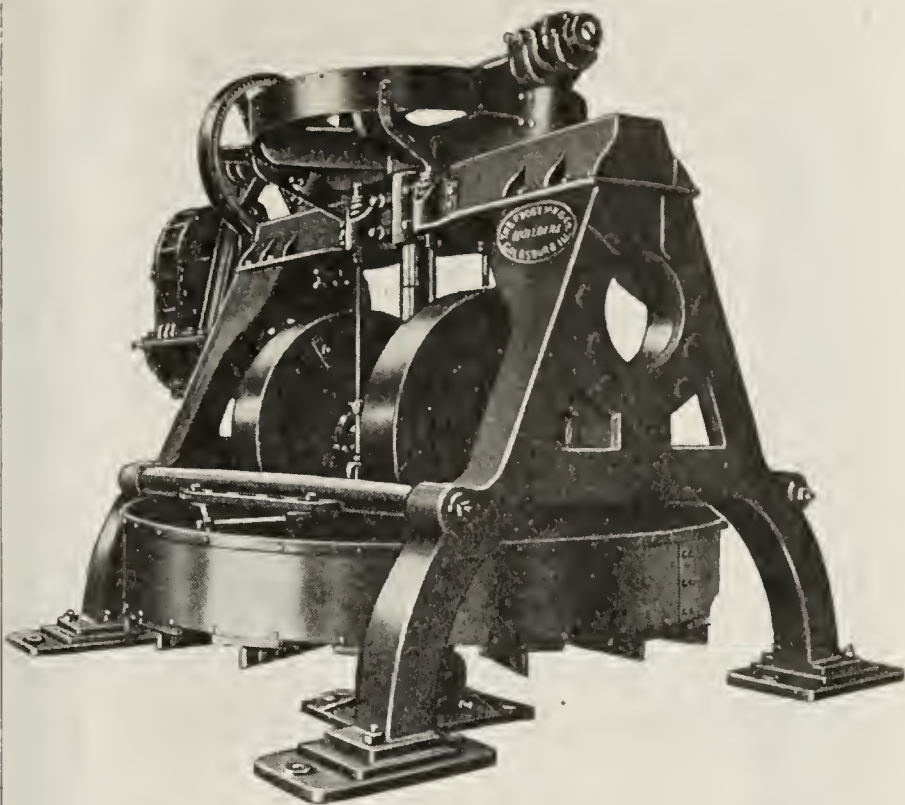
The Stockton Brick & Tile Co. opened a small plant in Stockton, Cal., in July for the manufacture of hollow tile and red brick. The plant is in charge of Ralph Wilcox, of Stockton.

Install Labor Saving Machinery

The Los Angeles Pressed Brick Co. has installed a series of huge clay storage sheds and modern conveying machinery, and their completion will mean the elimination for all time of the slower and more expensive method of removing clay from cars by man-power. By the new method five men will be able to do the work of forty; a great saving will result from the shortened time in handling the raw product and the system of the entire plant will vastly benefit thru the increased efficiency. Besides its Los Angeles plant, the company has plants at Santa Monica, Alberhill and Port Richmond. Its business extends thruout California, Arizona, New Mexico, Nevada and into Mexico and Central America. Howard Frost is president of the company and is active in the movement for better homes inaugurated thru the American Institute of Architects.

California Pottery Rapidly Expanding

The California Pottery Co., of Oakland, Cal., is exceedingly enthusiastic over the brilliant prospects of its plants in Oakland and Fresno and is now enlarging its activities to Merced,



DO YOU KNOW?

That Frost Pans aim to give you the best quality of material, workmanship and fabrication that can be obtained.

SEND US YOUR INQUIRIES
THE FROST MFG. CO.
GALESBURG, ILLINOIS.
ESTABLISHED 1851

Kiln Banding

Our Specialty

Located in the heart of Ohio's clay products territory, we are ready to give you prompt and efficient service based on years of experience, on short notice.

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that give perfect satisfaction, because they are built right—of the best material.

Oxy-Acetylene Cutting and Welding

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UHRICHSVILLE,

OHIO



Tycos
TEMPERATURE INSTRUMENTS
INDICATING-RECORDING-CONTROLLING

GREAT industries standardize on Tycos Temperature Instruments because built upon two basic factors—the dictates of science—the requirements of industry.

*All problems met
Tell us yours*

Taylor Instrument Companies
Rochester, N. Y., U. S. A.
There's a Tycos and Taylor Thermometer for Every Purpose

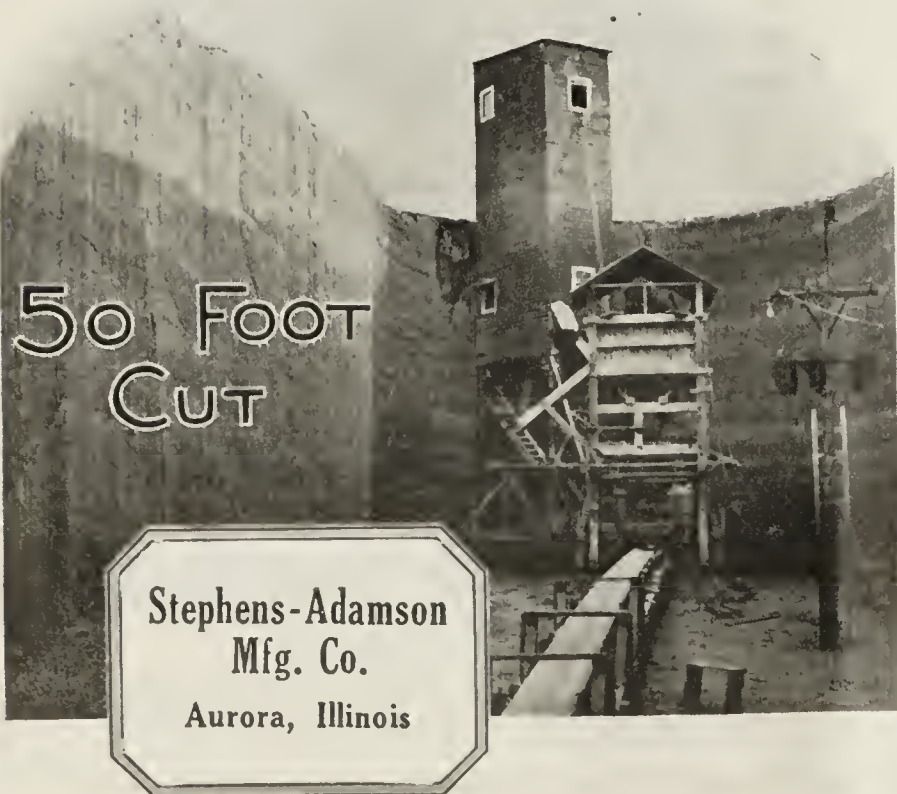
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Adel Excavator

The Continuous Planer

The right machine and the correct method for excavating hard shale, chalk rock and other materials not of a soft sticky nature. The fine cut taken by the machine thru the different strata and around a large arc gives a thoroly mixed product which requires minimum crushing and processing.

This machine runs into the shale bank, cutting a swath 54 feet wide and from 40 to 60 feet high. Swinging thru a wide angle the excavator is steadily progressed, making a light cut thru the different strata, yet with such rapidity that the capacity ranges between 50 and 75 tons per hour, according to the nature of the material.



where a new plant is being constructed. It will consist of sixteen thirty-foot down-draft kilns and will manufacture everything in the clay products line, and when completed will be one of the finest clay products plants on the Pacific Coast. The first unit of the new plant is practically completed and will start operations within the next thirty days. The Oakland branch of this fast-growing company intends to demolish its present quarters within the coming year and to build a new structure which will be devoted to the manufacture of higher grade articles, such as a complete line of stoneware.

Frame Residences Prove Fire Traps

Owing to the extreme dryness of the summer climate and the high fire record for towns and cities of northern California brick and plaster seem to be appealing to house builders as the most practicable materials to use. Numerous fires in the residence districts of Oakland, Berkeley and Alameda have made life something of a hazard for those living in wooden dwellings. Grass fires, especially in the beautiful hill region of the bay cities where water pressure is not the best, have led to the destruction of many homes.

N. A. Dickey, president of the California Brick Co., of San Francisco, said recently in an interview, that although brick building in general is rather quiet there is an increasing demand for hollow tile in the construction of dwelling houses. The saving in weight, and the fact that the dead air space makes the building cooler in summer and warmer in winter is bringing hollow tile to the fore in and about San Francisco. The fact that hollow tile construction has been approved by the United States army and navy has done much to increase the demand.

Turning Out 200,000 Brick Daily

The Tiernan Brick Co. has opened its factory in Macomb, Ill., with modern and practically new machinery. It is said a new process is being used and the capacity of the plant at this time is 200,000 brick a day.

Fire Brick Trade Picking Up

C. C. Gilbert, of the Chicago Fire Brick Co., stated that there has been a decided improvement in the business of the company during the past two or three weeks, and indications point to a slow but gradual continuance and improvement along the same lines.

Need 5 Years Steady Building To Make Up Loss

Building permits in Chicago for the first six months of 1920 show 1,816 permits were issued for residences. In the first half of 1920 the number of such permits was only 1,231, which shows that the individual home builder has refused to be mired in the slough of despond. Deputy Commissioner of Buildings Robert Knight explains the present tendency in home building as follows:

"Chicago has gone back to first principles in home building. Years ago the prospective home owner saved his money until he had enough to buy a lot. He saved a few more years and then built his home, borrowing a little money if necessary.

"Then came the promotor. He took the trouble of doing business with individual contractors off the hands of the would-be owner. He built wholesale; sold on a shoestring and the purchaser paid the rest like rent.

"But now the high money rates, including the big commission charges, and the necessity for a larger investment on which to pay interest, has made the traffic too heavy and the costs too high for the monthly payment purchaser. The result is that Chicago has gone back to first principles and only the citizen who has been saving up his money for the express purpose of buying a lot and building a home is on the job."

If—and it is even a mightier word than usual, in this case—conditions were right, Chicago would see the biggest building boom in its history in the remainder of 1921 and 1922, observers of the building conditions say.

Were building material prices to drop to twenty-five per cent. above 1914 prices more than \$200,000,000 worth of building would be done in the next twelve months, leaders assert. The largest building years in the city's history were 1916 and 1911. In the former the value represented by the year's permits was \$112,835,150, and in the latter it was \$105,269,700.

The almost entire cessation of building in 1918, when the value represented by the permits fell off to \$34,792,200, the lowest figure since Spanish war 'days, and conditions which prevailed in several months of 1920, gave the city a set back from which it can recover only by five consecutive years of construction work such as it has never seen before, in the opinion of the building trades council.

In one month of 1918, the number of apartment building permits numbered only four. These permits called for only thirteen apartments. Statisticians say that Chicago is increasing in population at the rate of nearly 4,000 a month.

Construction Work Improving

A visit to the offices of the Kimball-Wheeler Brick Co., in Chicago, elicited the information that their business has picked up during the past two weeks, and they look for continued improvement on small jobs during the rest of the year. The readjustment of the labor situation has held up many important buildings, and the indications now are that the banks will not assist any speculative building for several months. At the same time there is a large amount of small individual loans that can be made as soon as the labor rate is stabilized. The prospects now are that as soon as Judge Landis is able to get the various interests in the labor controversy to agree to a standard of settlement and future rates and working rules a large number of construction jobs will be started. These will be mostly bungalows, residences, small apartments, etc.

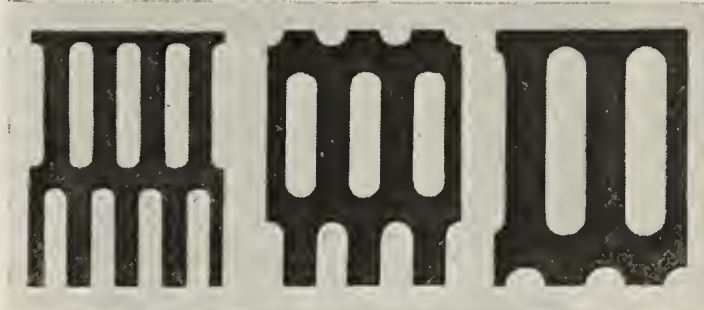
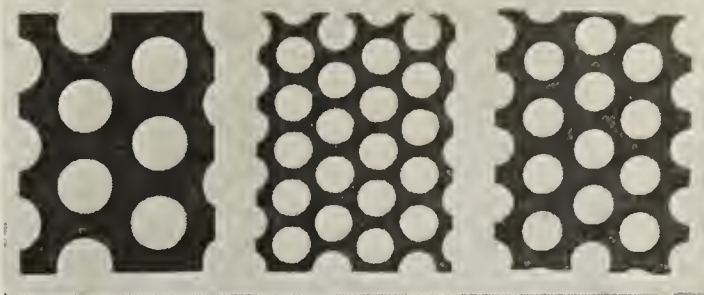
Dee Company Increases Capital Stock

The Wm. E. Dee Co. at Newport, Ind., has increased its capital stock from \$150,000 to \$200,000.

Criticism of Indiana Tax Commission

Manufacturers of face and common brick in Indiana and salesmen covering Indiana territory are beginning to take notice of the vicious argument between the board of tax commissioners and the Indianapolis school board on the question of a building program. Not that the Indianapolis situation alone might affect the output of brick used for construction purposes, but as the controversy becomes more heated there is more and more talk of abolishing the tax board, or at least greatly curtailing its powers. Under present laws, the board has the authority to reject any proposed public improvement, and members of the board have been doing this regularly. Many new school buildings and road improvements were contemplated this year, only to be knocked out by the state board when it came to giving permission to put the bond issues on the market. In angering the members of the Indianapolis school board in matters pertaining to the building program the board has adopted, the state board has done itself no good, since it is certain the majority members of the board will be using their influence, which is not inconsiderable, at the next legislature, if not for the entire abolishment of the state board, at least for the curtailment of its powers to such an extent that building can go on about as planned by the various school boards and boards of county commissioners and township trustees.

Perforated Steel Screens



For Screening Clay, Shale, Sand, Gravel, Stone and Cement

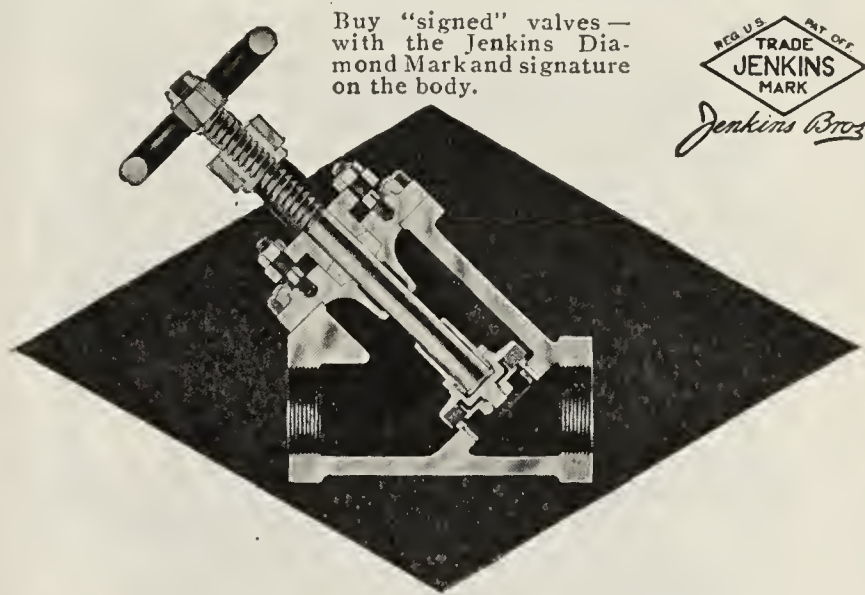
All sizes and shapes of holes in metal of proper thicknesses to give the best screening results.

Sheets furnished flat or rolled to shape for revolving screens.

THE HARRINGTON & KING PERFORATING CO.

635 N. Union Ave., Chicago, Ill.

NEW YORK OFFICE: 114 Liberty St.



Buy "signed" valves—
with the Jenkins Dia-
mond Mark and signature
on the body.



Figure 296

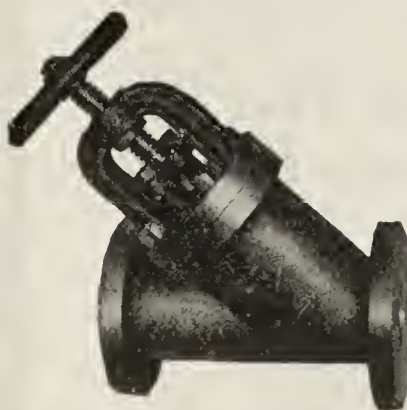


Fig. 297—flanged

Jenkins Iron Body Y or Blow-off Valve, standard pattern for 150 pounds working steam pressure or 250 pounds working water pressure. Fitted with Jenkins Renewable Disc. Has full, straight opening almost in line with the pipe. Used for Bo'ler, Blow-off service, and for handling thick fluids. Screwed or flanged.

At all supply houses.

JENKINS BROS.

New York Boston Philadelphia Chicago
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FACTORIES: Bridgeport, Conn.;
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Jenkins Valves
SINCE 1864

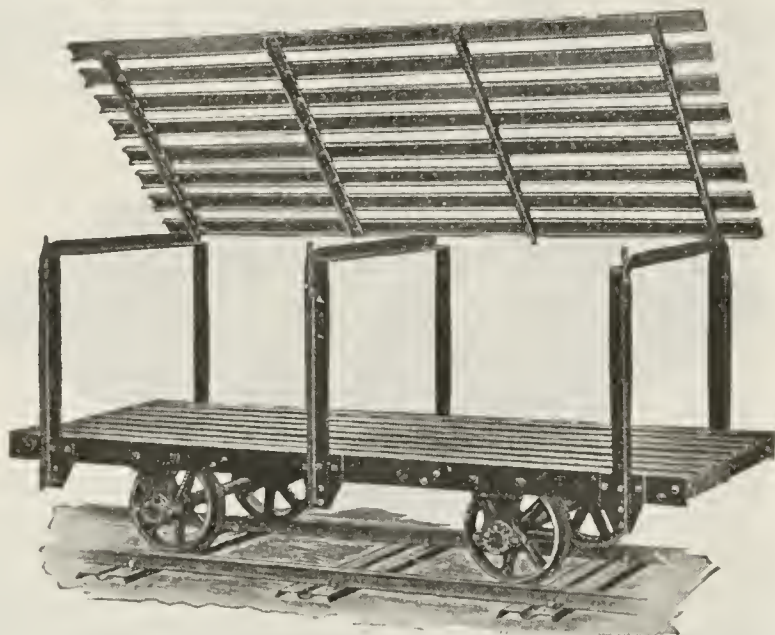


**HY-GRADE MANGANESE CO.
WOODSTOCK, VA.**

Miner
and
Grinder.

**Especially Prepared
for Brick Making**

Sales Office: CHARLESTON, W. VA.



Lakewood Double Deck Car No. 167

**The Dryer Car That Dis-
criminating Users Demand**

BUILT FOR SERVICE



FRANK H. ROBINSON
Dryer Cars and Clay Working Equipment

Factory and General Office,

Pittsburgh, Pa.

Hydraulic-Press Brick at Porter Opens

The plant of the Hydraulic-Press Brick Co., at Porter, Ind., has resumed work after a shutdown lasting for some time. A force of about sixty men is now being employed in the manufacture of hollow building tile.

New Dealer Organization

Announcement has been made that the Peoples Coal & Material Co., a newly organized company at Logansport, Ind., will handle brick in a retail way. The organizers of the company are J. B. Roach, C. A. Diffenbaugh, C. A. Baker, Jos. Fitz and T. M. Hoffman.

Claim Road Base Is Faulty

Alleging that the Frankfort and Jefferson brick road in Indiana is not being constructed according to specifications, taxpayers and residents along the four-mile highway have demanded that the work be stopped, the pavement now laid be removed, and the base be built according to specifications. The original contract calling for a four-inch base of concrete for the brick space, was granted to Arthur McKinzy, who turned the work over to the W. J. Nees Construction Co.

Best Year In History of Indianapolis

Business in Indianapolis, Ind., continues fair, and with a continuation of construction as it now is contemplated until the late fall and early winter, the season will not have been a total failure. During the first seven months of the present year more building has been started than in any year of the city's history. The marvelous part of the situation is that such a large percentage of new construction has been dwelling construction, there having been very little industrial or business building started. A fair proportion of this dwelling construction has been of brick, and the large volume of apartment house construction has used a high percentage of brick.

Paving a Mile a Day

A mile of paving is being completed every day in Iowa as road construction work is swinging into the fastest pace that it has ever hit in the history of the state, says the "Better Iowa" Bulletin of July.

A million and a half dollars were spent from the primary road fund alone during the month of June for road building, bridges and maintenance. This amount is boosted to \$2,000,000 when one includes special assessments and bond issues.

The summary of road building activities in June shows the following totals: 29 $\frac{1}{3}$ miles of permanent paving, 28 $\frac{1}{4}$ miles of gravel and 153 $\frac{1}{2}$ miles of permanent grading. Work on the primary road system is being carried on in eighty-seven counties; 146 projects are under way.

With the price of materials down almost to pre-war levels and with an abundant supply of labor, contractors have been confronted with only one handicap, the weather. State highway commission officials estimate that one-third of the actual working time of the past month has been lost on this account. It is thought that the construction in July has far exceeded that of June.

Large Theater in Louisville

One of the handsomest buildings that has ever been erected in Louisville, Ky., is the Rialto Theatre Building, of the Majestic Amusement Co., on Fourth Street, near Chestnut. It is faced in a creamy sort of white terra cotta, produced by the Atlantic Terra Cotta Co. This house cost about \$750,000, excluding the land, as it is on leased prop-

erty. The interior is very rich in marble, cut stone, etc., and the house seats 3,500, it being the largest moving picture house west of New York City.

Investigating Kentucky Clay

Dr. H. Reis, head of the department of geology at Cornell University, Ithaca, N. Y., and Floyd Hobson, of the State Geological Survey, are touring the state of Kentucky on an exhaustive investigation of the natural resources of the state, with special reference to high-grade clays.

Making Mat Brick on Hydraulic Press

Andrew Hillenbrand, of the Progress Pressed Brick Co., Louisville, Ky., reported that he had ordered extra dies and equipment for his hydraulic brick press, and planned to start manufacturing mat brick shortly. Heretofore he has produced plain pressed brick exclusively.

Kentucky Plants Busy

Some fine business has just been secured at Dawson Springs, Ky., on the new Federal hospital buildings. A. Blair, of Montgomery, Ala., has the general contract on thirteen new buildings. Contracts for hollow tile have been placed with the P. Bannon Pipe Co., and the Coral Ridge Clay Products Co., Louisville. These contracts are for good quantities, and will take a good deal of the production for two or four months, according to how fast the deliveries are made.

Strike Curtails Production

The Union Mining Co., Mount Savage, Md., operating a local plant for the manufacture of firebrick has closed a department of its works as a result of a demand for increased wages by the men. The advance has been refused by the company. It is proposed to continue the shut-down until the men return at the old wage scale.

Plant to Be Reopened

The Bay State Brick & Stone Co., recently formed at Haverhill, Mass., has purchased the brickyard and plant at West Auburn, Mass., formerly operated by the Worcester Brick Co. The plant, closed for some time, will be reopened as soon as necessary arrangements can be made. The sale was made by Henry H. Merriam, of Worcester, who took the property under foreclosure proceedings a year ago. The plant had been operated at various times by the Worcester Sand-Lime Co., the Concrete Brick Co., and the Worcester Brick Co.

Mexico, Mo., Plant Making Repairs

Based on a policy of foresight and what A. P. Green, president of the A. P. Green Fire Brick Co. of Mexico, Mo. described as cutting out everything in the way of "luxury," the large force of the company has been kept practically intact during the present business depression and almost all of the men have been working part time, sufficient to meet their current expenses. The payroll of the company has been cut from \$60,000 to \$20,000 a month, but the money has been distributed in such a way as to do the most good.

Last winter both plants of the company ran full time until the first of March, giving the men steady employment thru the winter months and putting a large stock of brick in storage at the plant and entailing a large investment of money. In the spring, when orders began to get high, the company began dropping off a day or two each week at both plants until the early summer, when outside work became plentiful. At that time the West plant was partially closed down. Men that were needed were taken to the East plant and operations

Insure the Quality of Your Product by SIL-O-CEL Insulation



A non-insulated kiln is unreliable. Radiation from exposed and unprotected surfaces destroys the uniform distribution of heat. Temperature control within the kiln is made extremely difficult.

SIL-O-CEL insulation will permanently eliminate this inefficiency and waste. SIL-O-CEL—a light weight material of great mechanical strength and lowest heat conductivity—will keep a maximum amount of heat steadily productive and properly distributed.

Kiln capacity will be greatly increased without added cost; the high quality of your ceramic products will be assured and rejection loss will be minimized by the use of this most effective insulator—SIL-O-CEL.

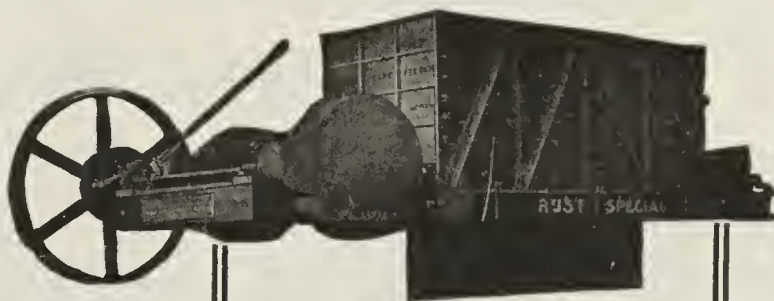
Write our nearest office for copy of Bulletin Y5. The easy application and heat resisting qualities of SIL-O-CEL are interestingly treated

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NEW YORK - 11 BROADWAY DETROIT - BOOK BUILDING DENVER - SYMES BUILDING
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CLEVELAND - GUARDIAN BLDG ST. LOUIS - RAILWAY EXCHANGE BLDG SAN FRANCISCO - MONADNOCK BLDG
NEW ORLEANS - WHITNEY CENTRAL BANK BUILDING

SIL-O-CEL

PREVENTS HEAT PENETRATION
TRADE MARK REGISTERED U.S. PATENT OFFICE



The Marion "Rust" Special Feeder Mixer

is designed especially for hard, rough usage in the brick plant. It will speed up the efficiency of your plant, keep your offbearers always busy and cut your costs to the bone. It will increase the percentage of perfect ware by giving a perfect uniform mix to your clay at all times.

To install a MARION "RUST" SPECIAL means the saving of money because it pays for itself in a short time and then keeps on saving for you.

Let us send you information concerning our complete line of clay plant equipment.

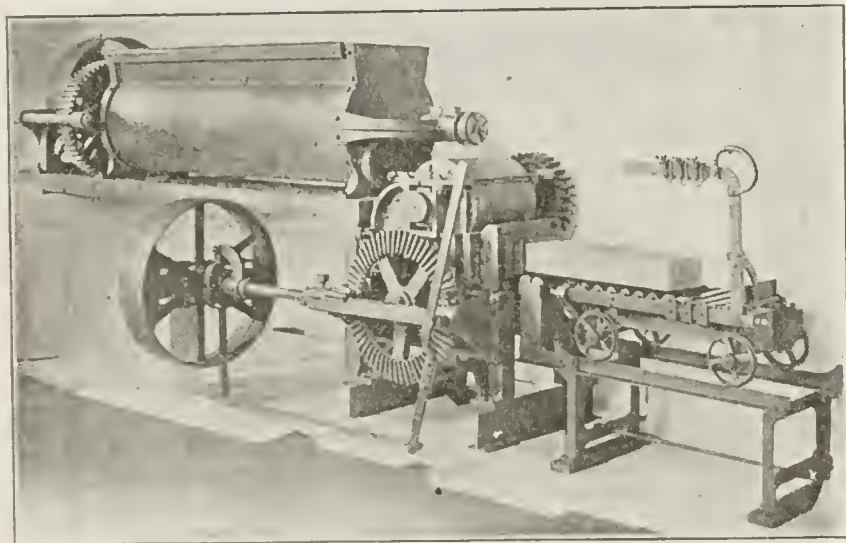
Marion Machine Foundry & Supply Co.
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Dryer, Transfer and Clay Cars,
with Flexible Bearings.
Switches, Turntables and Track.
THE CHASE FOUNDRY & MFG. CO.
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CHASE

The Modern Way



A Unit for Stiff Mud Ware

From Laminating Clay Surface Clay
Short Bonding Clay Fireclay or Flint

This is not a DREAM, HOT AIR or a TOY, but the MOST simple, economical and practical unit of machinery on the market.

Number 1 Unit as shown has capacity of 10 to 20 Thousand. Larger units are furnished with simple automatic cutter, guaranteed.

CLAYCRAFT SERVICE is at your command.

Write Us

Claycraft Service Co.

503 Wainwright Bldg.
St. Louis, Mo.

increased there keeping the force intact. During the past five months this plant has been running five days a week. The East plant now also has been shut down, but it has been for the purpose of making repairs, which will take about two weeks. As soon as the repairs are completed the plant will be operated for the remainder of the year, unless business conditions get so bad that shutdowns of small periods become imperative. The plants employ 600 men when running full time.

New Brick Plant Opens at Fulton, Mo.

A new brick factory has been started at Fulton, Mo., by Duff Ismay, Forrest Craighead and Harry H. McIntire, the operations of the company being on a limited scale at present. The firm is putting out a rough, red filling brick that is being manufactured from a clay found west of that city and they are being burned in open, updraft kilns. The clay is being secured from land owned by the J. W. McIntire Ice Co., of which Harry McIntire, a member of the new brick firm, is an official. The company tested its brick in the kilns of the Fulton Fire Brick Co. before setting up its own machinery and found them to be of a very satisfactory kind. The plant will be expanded as the growing business justifies it. Ismay and Craighead are brick masons of this city. They report that they are finding a ready sale for their product.

Revive Dead Montana Plant

For a long time the Missoula (Mont.) Brick & Tile Co. lay dead and idle, seemingly a symbol of a dead industry. Now, however, everything is bustle and activity around the plant. The plant is being operated under the management of Anton Vogt & Sons and is turning out 25,000 brick daily. Mr. Vogt is an expert in the clay manufacturing business and is familiar to the industry as the inventor of the Vogt Round Kiln. The new owners are building two kilns with a capacity of 160,000 brick each.

Brick Company Organized.

The Shankey & Sanders Brick Co., Haverstraw, N. Y., has been incorporated with a capital of \$15,000 to operate a local brick manufacturing plant. The incorporators are J. I. Shankey, S. W. Murphy, and J. S. Regan, 634 Monroe Street, Brooklyn, New York.

Form Brick and Tile Company

The Perfect Brick & Hollow Tile Co., New York, has been formed under Delaware laws with a capital of \$3,200,000, to manufacture brick, hollow tile and other burned clay products for fireproofing service. The incorporators are Frederick G. Stoehr, Rae Taustine and Thomas G. Chamberlain, New York. The company is represented by the Capital Trust Co., Dover, Del.

\$75,000 Damage Caused by Blaze

A blaze which was caused by the overturning of a torch caused damage to the Corning (N. Y.) Brick, Terra Cotta & Tile Co., said to be \$75,000. The brick making department of the company was completely disabled and will not again be in use before sixty to ninety days. The company has had orders on hand for four months in advance and has been working an extra force full time. Many thousands of dollars worth of machinery was destroyed among others being the dry pan as the room in which that machinery operated was completely destroyed.

The loss was covered by insurance, M. E. Gregory, proprietor, said. The ruins will be cleared away and the work of rebuilding begun at once.

Plant To Be Built at Woodsfield

A brick and tile plant is to be established at Woodsfield, Ohio. It will manufacture brick for use on Monroe county roads. The capital will be \$75,000.

Planning Installation of Machinery

When the four kilns at the Stone Creek (Ohio) Brick Co. plant are completed, it is planned to install machinery to manufacture brick for eight additional kilns to be built and also for factory buildings. Two kilns have been completed.

Drain Tile Demand Increasing

The demand for drain tile appears to be increasing rapidly in central Ohio territory according to W. P. West, of the Franklin Brick & Tile Co., of Columbus, Ohio. Mr. West late in July and early in August disposed of a half a dozen cars of drain tile and reports better prospects for the sale of that product. While the farmers' crops are not the best and low prices for farm products prevail still there is expected to be a fair demand for drain tile.

Breaking Records

The Port Washington, Ohio, plant of the Belden Face Brick Co., attained a record in July when one and a half million brick were shipped. That will be surpassed later in the summer it was stated reliably this week. The peak of production has not been attained, said an official of the company who stated that there are orders ahead for several months. The best previous month's shipment was in June, 1920, when one and a quarter million brick were shipped.

Two Plants in Operation

M. M. Morrow, sales manager of the Hocking Valley Brick Co., Columbus, Ohio, and of the Nelsonville (Ohio) Brick Co., went to Detroit on business early in August. The two companies are having a fair demand for paving brick as there is considerable highway work going forward. The demand for hollow building tile is not as active as formerly, altho some business is being booked from time to time. The plant at Logan, making pavers and one of the three plants at Nelsonville, making hollow tile are in operation.

Refractory Prices Reduced

The downward trend of steel makers' supplies at Youngstown, Ohio, is further indicated in reduction made on silica and clay brick, effective August 1. Silica was cut from a base price of \$35 to \$33 a thousand and the price on clay brick which has ranged from \$35 to \$40 has been cut \$3 to \$4 per thousand. The war peak price of silica brick was \$55 and the twelve-year pre-war average \$18.58. The twelve-year pre-war average on clay was \$18.33. High freight rates add much to the cost of brick making, accounting for the amount that present prices are above the pre-war level.

Permits Increase in Columbus, Ohio

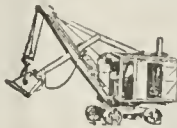
Building operations in Columbus, Ohio, during the month of July were fairly active according to a recent report of the Columbus Building department which covers the month of July as well as the seven months of the year which have passed. According to the report the department issued 407 permits in the month with a valuation of \$900,690 as compared with 225 permits and a valuation of \$620,415 in July of last year. During the seven months of the year the department issued 2,936 permits having a valuation of \$6,115,220



"We could not get along without our ERIE. We are well pleased—it is doing fine work." Brooklyn Brick Co., Indianapolis, Ind.

"WE'RE loading 50 tons of stiff clay per hour with our ERIE, and much pleased with its operation. It has proved very satisfactory in every way." Des Moines Clay Co., Des Moines, Iowa.

Just one of the many letters in our files showing the results clay products manufacturers are getting with the ERIE Shovel. We will be glad to send you more of them—also Photos of the ERIE excavating stiff clay and shale; unloading coal and piling it for storage, etc. Write for Bulletin "B."



BALL ENGINE CO., Erie, Pa., U. S. A.
Builders of ERIE Revolving Shovels and Locomotive Cranes.

ERIE

Revolving Shovels



You won't have to worry about competition if you treat your clay with

R. H. Precipitated Carbonate of Barytes

You can safely guarantee that your brick will be

Scum-Proof

You can get a higher price and influence architects to specify your product because Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's dependable.

We have a complete line of high grade chemicals for the clay industry

The Roessler & Hasslacher Chemical Company

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Boston, Mass.

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PREMIUM COAL

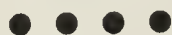
*High in Heat Units
Low in Sulphur
Even in Combustion*

Produced By

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“BIG CREEK”

for years has stood for

SERVICE AND QUALITY

PEABODY COAL COMPANY

FOUNDED 1883

OPERATING 36 MINES
WITH ANNUAL CAPACITY
OF

18,000,000 TONS



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“PEABODY FOR SERVICE”

as compared with 1,724 permits and a valuation of \$6,315,645 in the corresponding period last year.

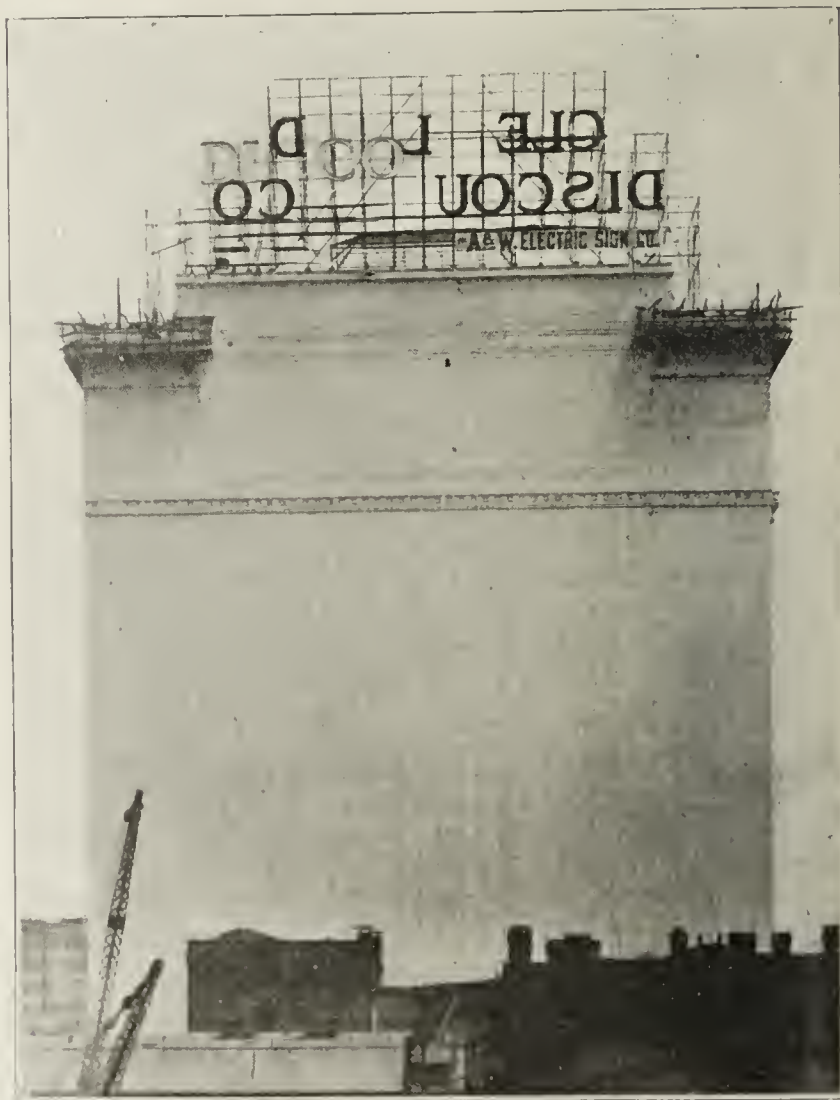
Of the permits issued in July ninety-two were for dwellings as compared with seventeen in July of last year and forty-one in June, 1921. The number of permits for dwellings issued since the first of the year was 639 and the valuation, \$3,150,000 as compared with 174 dwellings and a valuation of \$950,000 in the corresponding period in 1920.

Many Brick Road Jobs in Ohio

Bids were opened July 22 by the Ohio Highway Commission for road improvement jobs in about thirty-five counties of the state. Included in the list were brick jobs as follows: About two miles in Ashland County, a stretch of five miles in Ashtabula County, a job of a mile in Coshocton County, two jobs in Crawford County aggregating about eight miles, a stretch of two miles in Holmes County, a job in Jefferson County a little more than a mile long, three and a half miles in Knox County, a short stretch in Lorain County, a half-mile stretch in Ross County and one of the same length in Sandusky County. Jobs in Stark, Tuscarawas and Wayne Counties also specified brick.

1,000,000 Face Brick in One Building

The last brick in what is believed to be the largest solid face brick wall ever built anywhere in the country, certainly the largest in Cleveland, or Ohio, was put in place not long ago. The operation marked the completion of the west wall of the Cleveland Discount Co. Building, the first 20 story office building to be erected here. The entire structure is finished with Equitable Gray brick, supplied by the Hydraulic-Press Brick Co., and consumes close to 1,000,000 of this material. The west wall alone takes something more



One of the Largest and Handsomest Examples of Solid Face Brick Wall Construction, Just Erected In Cleveland, Ohio.

than 400,000 of the brick, according to Arthur S. Fielding, manager of the Cleveland district of the Hydraulic-Press.

Aim to Reduce Paving Brick Rates in Ohio

Paving brick manufacturers of Ohio have joined with other road building material people in the complaint filed before the Ohio Utilities Commission for a radical reduction in freight rates on such materials. Hearings in the investigation started August 2. George J. Bolender, who was chief witness for the Ohio Highway Commission, showed the big increases made in freight rates on all road building materials including brick, sand and gravel, crushed stone and slag. Mr. Bolender, who is traffic manager of the Kalamazoo (Mich.) Chamber of Commerce was the chief factor in securing a reduction of 22½ per cent. in such freight rates in Michigan.

Gilbert Mitchell, traffic manager of the Ohio Paving Brick Manufacturers' Association, also assisted at the hearing.

Reductions in freight rates have been made in New York, Mississippi, Michigan, Wisconsin and Virginia and in no case have the railroads appealed to the Interstate Commerce Commission. A radical reduction is confidently expected in the Buckeye State.

Many Homes to Be Built

With the approach of the end of the building season, more projects of a speculative or investment nature are appearing. The latest of any considerable importance in Pittsburgh, Pa., is announced in the report that William E. Harmon & Co. have purchased 2,400 feet of frontage in the East Liberty district of the city. It is the present plan to erect five and six room houses, for which there is a great demand, on practically the entire frontage. Negotiations are under way, it is said, with several architects and builders to erect houses in groups in order to effect a saving in purchasing materials and supervision.

Pittsburgh District Shows Good Production

From figures made public last week by M. Hoke Gottschall, director of the bureau of statistics and information of the department of internal affairs of Pennsylvania, it is found that \$25,500,700 was produced in Allegheny county in 1920 from clay, glass and stone products. Under this head are included 50,000 tons of clay and 71,031,500 brick. For the cities of the county the following figures are given: Pittsburgh, clay, glass and stone products, \$6,445,200, 6,500 tons of clay and 43,123,600 brick; Homestead, clay, glass and stone products, \$1,861,000, 33,600 building brick and 900 tons clay; Braddock, clay, glass and stone products, \$116,300, 2,935,000 building brick, 75,000 pieces terra cotta and fire clay products; McKeesport, clay, glass and stone products, \$57,000; McKee's Rocks, clay, glass and stone products, \$49,800; Tarentum, clay, glass and stone products, \$1,536,300; Glassport, clay, glass and stone products, \$708,800; Coraopolis, clay, glass and stone products, \$1,125,000; Carnegie, clay, glass and stone products, \$47,000, 2,389,000 building brick.

Expect Improvement in Autumn

W. W. Fischer, of the Fischer-Herbert Brick Co., of Memphis, Tenn., said their plant was operating on common brick, and that, while summer activities were still a little slow, they looked to see a good autumn trade. In sewer pipe, fire brick, roofing and similar items trade is picking up. The last items they handle thru the Fischer Lime & Cement Co. from their warehouses on Walnut St.

A Million and a Half Hotel in View

At the office of the B. Mifflin Hood Brick Co., 324 Madison Ave. Bldg., Memphis, Tenn., a favorable report on brick trade was made. They are furnishing some of the brick and tile for

Why Shovel the Big Pile?

When you can develop
the same amount of heat
at a saving of 34%
by the use of **O'Gara
Harrisburg Coal.**

Write for "Coal Cost"
of producing steam.
It's worth having.

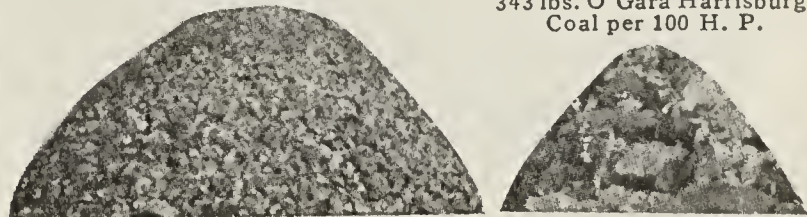
O'Gara Coal Company

Fisher Building
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McKnight Building
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521 lbs. "Fair Coal" per
indicated 100 H. P.

343 lbs. O'Gara Harrisburg
Coal per 100 H. P.



Brick and Clay Drying with Speed and Economy

"Garden City" Steel Plate Fans

installed in many Brick and Clay
Plants throughout the country have
established a reputation of dura-
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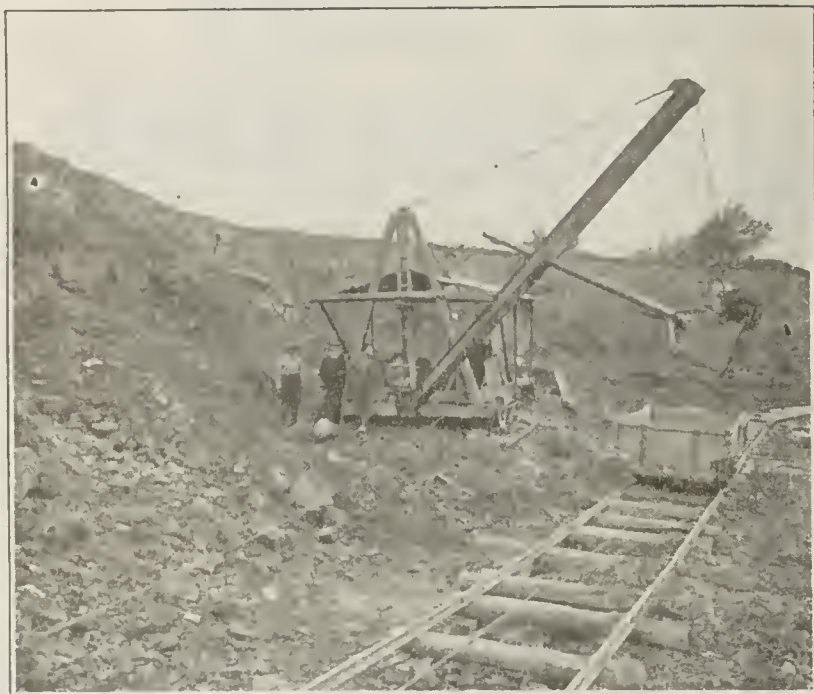
Garden City Fan Co.

Manufacturers

Established 1879

McCormick Building
Chicago, Ill.

The One Man Digger



is cutting clay costs for many operators.

Light, economical, self-propelling. Track or caterpillar type mounting, gasoline or electric power. One man and the Bay City Digger will displace a dozen men. Always ready — rain or shine. The low price and operating cost enables the small operator to install this labor saving machine.

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Why not locate near unlimited supplies of raw materials, in a region provided with abundant electric power at attractive rates?

Field investigations by our Company Geologist, thoroughly familiar with the mineral deposits of the region.

For samples, maps and detailed information in regard to deposits, transportation and power, apply to

**CENTRAL MAINE POWER
COMPANY**
AUGUSTA, MAINE

the Catholic High School, Memphis, J. J. Perryman, contractor. Buff brick, fireproof tile, floor and partition tile figure in this job. They are furnishing 125,000 common brick and 11,000 pieces of National Fireproofing Tile of California mission type for the W. G. Hamilton residence job in Memphis. The School board has expended something like \$300,000 in the last six months for school improvements and additions. The Tri-State Hotel project, when it gets under way, will be a 14-story structure, the investment amounting to about one and a half million dollars. Bids are yet to be taken on that job.

Memphis Outlook Appears Very Encouraging

Brick interests at Memphis, Tenn., report outlook good for August, tho large building undertakings are moving off slowly and late June and early July experienced a slight lull. Considerable work is under plan. The harvest prospects are bright in the Memphis territory, and some really large building projects will take form early in the autumn.

Several firms were interviewed by the *Brick and Clay Record's* correspondent. F. R. Thomas Clay Products Co., Central Bank building, who do a carload business strictly with dealers, said:

"Trade is picking up a little, and conditions are very satisfactory, tho there was a slight lull in building early in the summer. Crop reports, by which we gage Southern prosperity, are more favorable, and the crop was put in at less cost and was more diversified. While some of the large industrial plants in the South are not ruining, others are being rehabilitated and overhauled, and in some of this work a good line of clay products is being used. There is also considerable drainage work in progress in the river sections of this territory. In our business we are handling face brick, fire brick, hollow tile, composition roofing, a full line of sewer pipe, flue lining, wall coping, etc."

✻ ✻ ✻

Prince Albert (Sask.) Brick Co., Ltd., has been incorporated with a capital of \$5,000.

Developing Okanagan Valley Clays

Development of some of the clay products in the Okanagan Valley in British Columbia is being undertaken by the Lakeside Clay Products, Ltd., a firm with head offices at Vernon, B. C., and works at Okanagan Landing. The company commenced business late last fall and succeeded in burning one small kiln of brick. At present common brick are being made, but the company has clay which will make better lines. The plant has one brick making machine complete with crusher, mixer, cutter, etc. When working at full capacity the plant turns out between 1,600 and 2,000 brick an hour. The brick are wire cut, the cut being lengthwise of the brick. A report from the Imperial Institute, London, England, pronounces the clay to be very high grade and suitable for pottery, terra cotta, building and drain tile, floor tile, roofing tile, etc. The capital of the company is \$50,000 and the officers are: President, G. T. Reinhard; secretary-treasurer, Louis J. Ball; managing director, Richard Curtis, and Frank Mitchell, who is a director.

Canadian Clay Products on Exhibition

The University of Saskatchewan and the Bureau of Labor and Industries of the province of Saskatchewan, Can., have united their energies towards promotion of the use of clay products in that district. They have collected samples of ware from every plant in the province and also many samples of undeveloped clay properties, the latter including kaolins, ball clays, fire clays, shales and soft clays which offer opportunities for development.

This collection of material was on display at an exhibition

in Saskatoon during July, and will be taken to Regina for a similar exhibition during part of August. In addition to the wares displayed, "Build with Brick" signs and literature were to be seen from every angle. The ware was laid up with selected mortar, mortar joint and bond.

The Dominion Fire Brick & Clay Products Co., Ltd., of Claybank, Sask., showed a complete line of fire flashed face brick. The Estevan Coal & Brick Co., was represented by a nice line of cherry red face brick, including a corduroy effect made on their dry press machine. The Bruno (Sask.) Clay Works, Ltd., exhibited building tile, fire proofing, drain tile and brick. The Broadview Brick Co. and the Arcoia Brick Co. were represented, and there were also exhibits of stoneware, cooking ware and art pottery made from Saskatchewan clays.

The enormous wheat crop of that district this year predicts a big increase in building next year. All the plants are busy this year but they are looking forward to much larger business in 1922.

Mexico Clay Products Company Organizes

The incorporation of the Saltillo (Mex.) Clay Products Co., on June 8, has been announced. This company will engage in the manufacture of all kinds of clay products, such as building and flooring brick, roof tile, hollow building tile, and so forth. A plant with all modern improvements has been erected in Saltillo. Engineer F. E. Salas has been appointed general manager of the company.

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

A New Link-Belt Book on Belt Conveyors

A New Book on Belt Conveyors has just been published by the Link-Belt Company of Chicago, Philadelphia and Indianapolis. It is book No. 215 and fully describes the Uniroll and Multiroll Idlers recommended by this company.

Among the interesting features of the book are.—

1. The correct methods of figuring belt conveyors and the details entering into them.
2. Price lists which will enable the user to determine the cost of a complete conveyor or any portion of a conveyor.
3. Numerous examples suggesting the correct types of belt conveyors for the handling of bituminous coal, by-product coke, sand and gravel, bagged sugar or similar material, crushed rocks, etc.

In addition there are many illustrations of typical installations.

This book should be a valuable addition to any library and will be sent by the Link-Belt Company to any one interested in this subject.

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New Offices for Schaffer

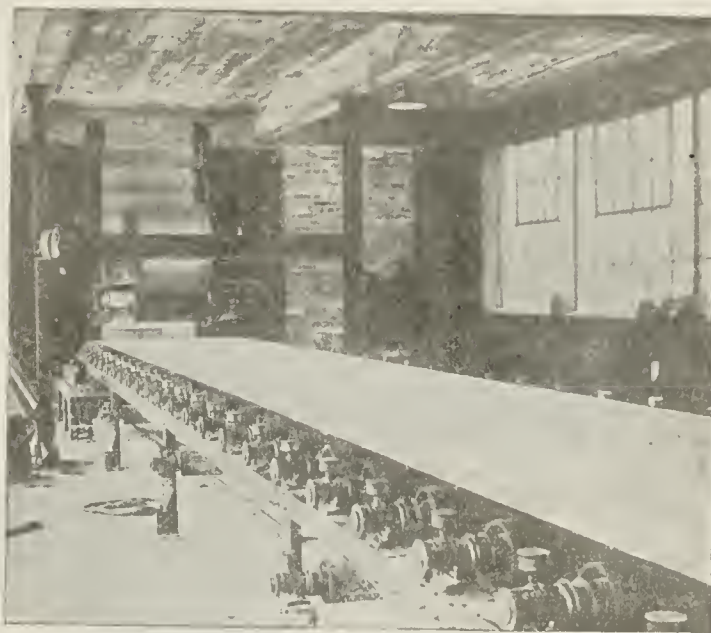
Schaffer Engineering & Equipment Co., Pittsburgh, Pa., announce the combining of their administrative sales and manufacturing departments in their new general offices at 2828 Smallman Street, Pittsburgh.

This arrangement will enable them to render more efficient service to their clients as their organization will be thoroughly co-ordinated and augmented by additional personnel and facilities.

The new offices, adjacent to their city factory, have been completed and the Schaffer Company anticipated being in these new quarters starting August 1st.

BURN MORE BRICK

TO MEET THE DEMAND THAT IS SURE TO COME EQUIP YOUR PLANT WITH WELLER MADE MACHINERY TO HANDLE THE RAW MATERIALS AND FINISHED PRODUCTS MECHANICALLY. OUR ENGINEERS ARE AT YOUR SERVICE TO ASSIST IN THE SELECTION OF EQUIPMENT TO MEET YOUR REQUIREMENTS.



We Design and Make

APRON CONVEYORS

BELT CONVEYORS

BUCKET CONVEYORS

DRAG CONVEYORS

PAN CONVEYORS

SPIRAL CONVEYORS

BUCKET ELEVATORS

ELEVATOR BUCKETS

DUMP CARS

TRUCK DUMPS

STEEL HOPPERS

WELLER-MADE STEEL CHAIN

COMBINATION MALLEABLE and STEEL CHAIN

PULLEYS—HANGERS

FRICTION CLUTCHES

COLLAR OILING BEARINGS

COAL AND ASHES HANDLING EQUIPMENT

OIL BURNERS

WRITE FOR PRICES

WELLER MFG. CO.
CHICAGO

New York
Boston
Baltimore



Pittsburgh
Salt Lake City
San Francisco

THERE are a few things of which we are assured:—That our Fourth Vein Coal is fitted to your needs—That our capacity, equipment and preparation fit us to serve you—That we *Try* to give our Customers and Friends that element of Personal Interest and Service which we believe so vital to the best business relations. Maybe this last is the most important and most difficult. Difficult and vital things are worth trying, however. May we hear from you?



Walter Bledsoe & Company

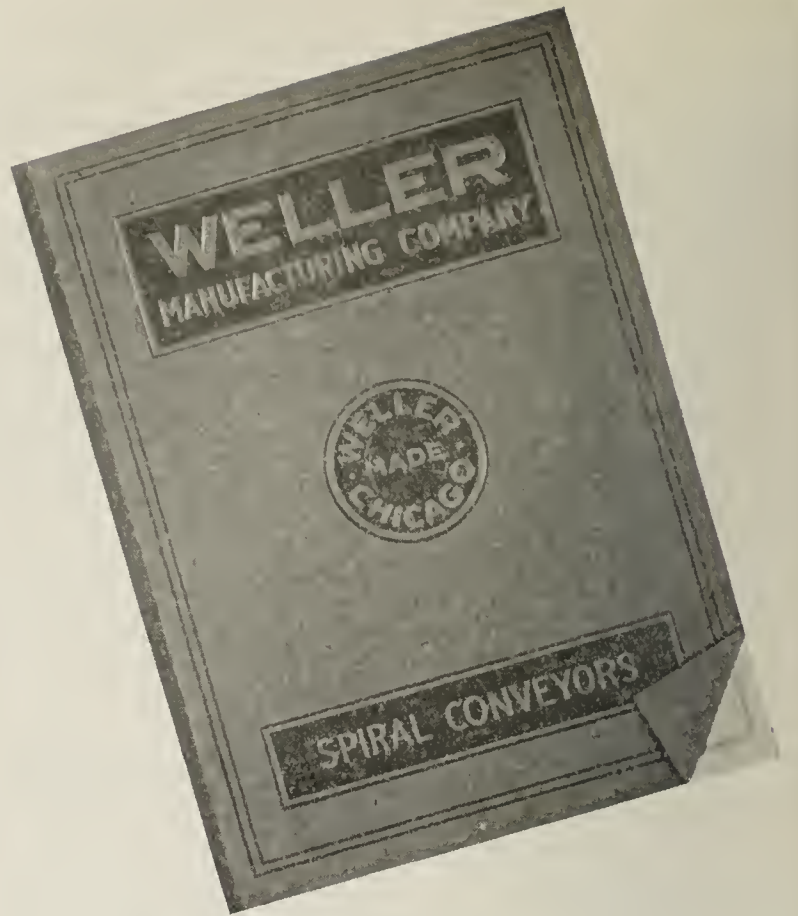
Terre Haute Trust Building

TERRE HAUTE :: INDIANA

OLD COLONY BUILDING
CHICAGO :: ILLINOIS

TRACTION TERMINAL BUILDING
INDIANAPOLIS :: INDIANA

UNION CENTRAL BUILDING
CINCINNATI :: OHIO



Weller Catalog 35-D

SPIRAL CONVEYORS

The Weller Manufacturing Company, 1820 N. Kostner Ave., Chicago, have recently issued Catalog 35-D Spiral Conveyors, and it is a revelation to study thru it and note the great variety of spiral conveyors—for instance, one page alone illustrates the double flight spiral conveyor, spiral conveyor with mixing paddles, cut flight spiral conveyor, cut flight spiral conveyor with mixing paddles, and cut and folded flight spiral conveyor. Other pages show the conveyor with perforated flights and different types to meet every conceivable need.

Every clay products manufacturer should have one of these catalogs in his file.



Tapalog

The "Tapalog," as the Wilson-Maeulen Pyrometer is called, is installed in 22 round, down-draft kilns of the A. P. Green Fire Brick Co., Mexico, Mo.

The wires from the thermo-couples in the crown of each



The Wires from the Thermo-Couples in the Crown of Each Kiln Are Led to the Pyrometer Room.



The Recording Instrument of the Pyrometer Installation

of the 22 kilns, are led to the pyrometer room where are located the indicating and recording instruments. A switch is arranged so that at any time the temperature in any kiln can be shown by turning the switch to the proper point.

A switchboard is arranged so that the temperature of any six of the twenty-two kilns can be recorded on a continuous paper chart. By simply changing a wire connection any kiln desired can be connected to this recording instrument. The custom with the A. P. Green Fire Brick Co. is to keep the six hottest kilns connected. There are never more than six kilns on high fire—that is, above the water-smoking temperature at one time, and as soon as one kiln is finished it is replaced by the hottest kiln not already connected.

Each kiln is recorded in a different color, marking the under side of a roll of transparent paper, giving clear and distinct time temperature curves. There is enough paper to complete one month's record on a roll.

This gives a complete record of the fireman, as an extra heavy fire of fuel will cause the curve to sag. Or if the fireman neglects his fire this fact is shown with equal clearness. As a result, the fireman, knowing that the instrument is continuously recording day and night, gives closer attention to the kilns, fires more regularly and accomplishes the burn with less coal.

✱ ✱ ✱

"Four Reasons"

Not the four "seasons," but the four "reasons" is the title of a new folder which the Armstrong Cork Company, Pittsburgh, Pa., are distributing. It describes the use of Nonpareil High Pressure Blocks and Cement for the insulation of high temperature equipment, such as enameling or japanning ovens, evaporators, kettles and cookers, feed water heaters, etc.

A copy will be sent promptly to those sufficiently interested to write for it.

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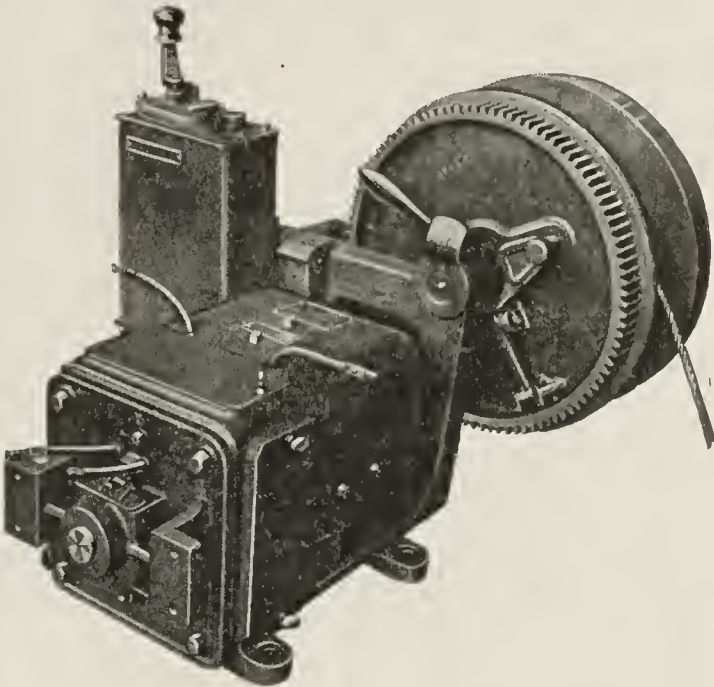
Crosby Joins Celite Organization

E. S. Crosby, Sales and Advertising Manager for the United States and Cuban Allied Works Engineering Corporation, has resigned to become manager of the Eastern District of the Celite Products Company, producers of the well-known Sil-O-Cel insulating material, and Filter-Cel, an ideal filtering medium. Previous to his service in France with the army, he was assistant sales manager for the De Laval Steam Turbine Co., of Trenton, N. J.

Mr. Crosby will make his headquarters at 11 Broadway, New York.



DRYER CAR PULLER



Do you know that the most stubborn dryer cars can be moved down the tunnel by one man and a

Goodman Dryer Car Puller?

You can put your car pusher men and their crow-bars on more productive work when you pull your cars by our Electric Dryer Car Puller.

Requires no shutdown of dryer for installation.

Is designed to exert sufficient pull to crush a brick lodged on dryer track. Built to sell at a reasonable price.

Can you afford to be without one?

Goodman Manufacturing Co.

48th to 49th Streets on Halsted

CHICAGO - - - ILLINOIS

Stop Cleaning Fires By Hand

Fire Your Coal This Way

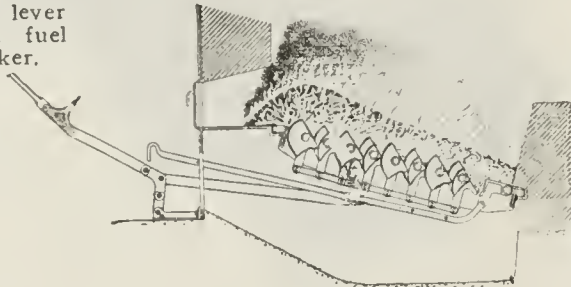


FIRING

Fresh coal laid on front.
Gases must pass over
fuel bed.

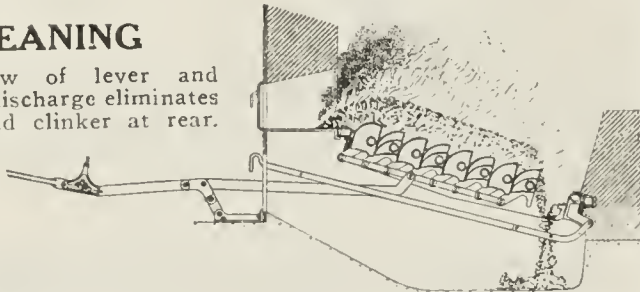
STOKING

Half throw of lever
advances coked fuel
evenly over stoker.



CLEANING

Full throw of lever and
auxiliary discharge eliminates
all ash and clinker at rear.



CoKal Hand Stokers save fuel, save labor
and eliminate that hot, dirty, disagreeable job
of cleaning fires.

Send for Illustrative Bulletin

COKAL STOKER CORPORATION
1037 NORTH CLARK STREET, CHICAGO

Use
COKAL
HAND
STOKERS

The Meaning Of A Name

When you think of the finest qualities of silverware or jewelry the name "Tiffany" immediately flashes across your mind.

And an increasing number of people, when they think of the best in pyrometer construction, immediately think of "Engelhard."

Reactions such as these are the results of years of honest effort to build and market good equipment.

Engelhard Pyrometers

have the reputation for accuracy and sensitivity that makes many people think of them as a laboratory standard or "court of last resort." And they are good for this purpose. But coupled to their laboratory sensitivity and accuracy they have the downright strength that enables them to stand up for years under the severest industrial uses.

No matter whether you are equipping your laboratory or your plant, it will pay you to remember that

*Engelhard Pyrometers
are good Pyrometers to
Standardize on.*

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30 Church St. New York City

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BRICK *and* CLAY RECORD

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

ARE YOU WILLING TO WORRY?

THE ABOVE IS the title of an editorial which will appear in the September issue of the "Dodge Idea." We have had the opportunity to read this editorial and find that it contains a thought that touches nearly every reader but which may not be exactly pleasant to him. However, this is undoubtedly a good time to get down to the truth and we feel that the message below does contain a large element of truth.

It is an old saying that it is foolish to attempt to paint a lily, or perfume a rose, nature does it so much better. The editorial reprinted below expresses the thought so well, that we feel it needs no further comment nor embellishment.

"Normalcy" is the most abused word in our modern language; certainly it has been hooted, cuffed, man-handled and maltreated by every known variety of the genus man from the barrel-a-year cross-roads merchant, at Hicks Corners to the executives of the largest corporations in the United States. Every journalist with a spark of life in him—yea, and every editor, too, has taken the word and used it as the basic text for much hot air anent the business and industrial situation.

"What really constitutes normalcy? The writer claims—and he believes this statement will arouse argument—that normalcy is really the willingness to worry. Before exception is taken to his statement let us make one single comparison. What constitutes normalcy in the average family? Let us assume—and the assumption is sensible, I believe—that such normalcy consists in a man being married, raising a family, educating his children, putting aside something for a rainy day, holding down his job, and, in general, being a decent and law-abiding citizen. Now—is there any one who can truthfully say that all this is accomplished without worry? Scarcely!

"Contrast this phase and condition of normalcy with that which presumedly is prevalent in industry today and we find a striking and dramatic contrast. The average executive of any organization—and there are but few exceptions—is unwilling to worry and because of that unwillingness business is wobbling along on a half-portion basis. Show me an

organization today that is not trying to speed up production, to cut salaries and to limit purchases to immediate needs and I will show you a whole flock of white blackbirds!

"The average executive today is a modern Dr. Jekyll and Mr. Hyde, but he hates to admit it! Visualize, if you will, this individual of odd and composite characteristics. He attends a sales conference and talks to his salesmen. A hand toys with the golden chain draped athwart a well-rounded stomach and he mouths well rounded—and insincere!—phrases. He tells his salesmen that there really is no depression; that they can go out and sell the prospect. He is talking pure bunk when he blandly explains to the defenseless salesmen that business is really good and that all they have to do is to go out and place their proposition before purchasing agents and that purchasing agents will begin signing orders with reckless abandon. And the executive knows it is bunk when he is talking; otherwise he is a normal man—but he doesn't want to worry!

"Let us shift the scene. The executive leaves the sales conference for his office. A frown creases his brow—and he almost starts to worry! but an idea comes which will eliminate worry, so he gets his chief purchasing agent on the wire and says with finality, "Don't buy a damned thing!"

"The above is a statement of facts; it is almost a verbatim account of what has happened and what is happening today in industry and the very insincerity of it is the thing which is making this depression purely a psychological matter rather than an economic one.

"Executives today have lost their ability and their willingness to worry. That is why salaries are being cut, why office forces are being cut to the bone, why advertising appropriations are being limited and why every known method of retrenchment is being used. Just to save the executive from worry! The average executive has had four years of good business, minus worry, and he has grown soft and flabby on it. Time was when a business problem came up and that executive met that problem like a fighting man; he ate, slept and worked with that problem—every hour of waking life was so crammed with that problem that he

solved it. But he had to worry like the devil to do it! Not so today; he leans back in his chair and complacently waits for the other fellow to do the heavy worrying, without ever thinking that the other fellow is playing exactly the same game! He can't and won't worry.

"What industry needs today is fighting men at the head of it; men with the ability to analyze and fight—no waiters but go-getters. Industry needs men who will keep purchases of today on a par with the same proposition which existed three years ago between sales and purchases.

"Executives whose fighting ability is a tradition should be relegated to the scrap heap or given some post in the organization where their supine attitude toward present conditions will not interfere with the healthy recovery of business to 'normalcy' which will only come when new blood is placed in a position of power—new blood with the ability and willingness to worry.

"Are you willing to worry?"

* * *

THE DESCENT HAS BEEN CHECKED

AFTER about fourteen months of uninterrupted decline, the most spectacular downward movement of average wholesale commodity prices in modern times apparently has been checked. The index numbers of both Dun's and Bradstreet's show a reversal upward on August 1, compared with one month previous. The testimony of these numbers is concurred in by the "London Economist's" index of British prices, which discloses a slight gain in July.

The advance of Dun's index is 2.41 per cent., the first rise since April in 1920. Bradstreet's number, made up largely of raw material prices, added to the gain which first appeared in the July 1 compilation, making a total advance, from the low point of 4.12 per cent. This index is now 20 per cent. above the 1913 average. Dun's index, on the other hand, is 35.4 per cent. above 1913, while the cost of living index compiled by the National Industrial Conference Board is 61.6 per cent. above 1913.

What is the significance of the change in the trend of average prices?

When prices slowly began to creep downward from their exalted peak early last year, it was the forerunner of the great slump in business which was to come. May not the stiffening of prices at the present stage of the business cycle similarly portend a revival of trade activities? Very likely it does. Last year the price fall was uneven, some commodities dropping abruptly while others were still rising and in good demand. Eventually, however, the wave of deflation swept over all.

The recovery from the depression likewise promises to be uneven. Prices that are still clinging to the top limb or near it have still to be shaken loose. But those which have undergone overdrastic deflation are bound to recover. For that reason the index numbers do not give an accurate picture of the general price movement such as they do in normal times.

Economists reckon that the inequality of price deflation has been one of the most retarding factors of the depression since it has depleted the purchasing power of important producing groups. What seems to be happening now is an evening up process in prices, the ultimate goal of which will be a parity between all commodities and industries.

With the above changes going on one must expect another lowering of the index number. We look for a long series of changes, but each one varying but very little from the preceding index figure and some of them plus and others minus.

The whole process may be likened to that of a rubber ball falling from a high point. Its descent has been finally checked, and its oscillations between the first check and its final state of rest will resemble the stages we are now passing thru. From this, one can feel that the big change has taken place and from now on altho there will be continual changes, they will be much smaller and the level is near enough to the final state of normalcy so as to be able to gauge what the future holds for the industry. Our feet are now nearer the ground and we should be able to go ahead.

* * *

SELLING BELOW COST

DESPITE our persistent harping on the necessity for the clay products manufacturer to keep proper costs, the seed of thought that we have

distributed has not taken root everywhere. We are convinced that not all manufacturers know accurately what their ware is costing them to produce, and at what price they must sell to obtain a fair profit.

This is apparent when we glance thru the Digest of the Common Brick Manufacturers' Association. In the last issue of that bulletin, we see that some manufacturers are selling their ware at a lower price than will permit of a profit, and in some instances at a distinct loss. Unless a manufacturer is in difficulties, we fail to see what possible benefits he can derive by selling his product below cost, so that the natural conclusion is that he does not actually know whether or not he is making or losing money at the figure at which he is selling, but simply underbids his competitor and trusts that he will still obtain a profit.

It will be remembered that such competition was at one time quite common in the clay products industry, but we hope that business has now for the most part graduated from such methods of cut-throat competition. Whenever a manufacturer is selling his product at a price way out of line with his competitors, it might be well for him to study over his costs and his cost system and ascertain whether his price is right with respect to the profit and loss account of his ledger.

In times of keen competition and comparatively little business, prices of course, are cut down to the lowest possible point, sometimes even to actual cost, but the manufacturer who is continually selling below cost will find that he has created for himself, thru the very fact that he is getting all the business, a "Frankenstein monster" that will revolt on him to his sorrow.

* * *

ON PLANNING FALL BUSINESS

WITH THE FALL season approaching, one is reminded that there remains but one more opportunity to get in a lick at construction before the blizzards and unpleasantness of wintry weather makes building undesirable. Many manufacturers and dealers are now planning for their fall business and devising campaigns to follow. An analysis reveals that there are some very good arguments available that the manufacturer and dealer might use advantageously in his selling campaign.

This fall will be the last chance for a contractor, building laborer and building material supply man to store money in his coffers before the end of the year.

In most instances, the coffers are far from overflowing, and we are not far from wrong when we say that all three, the contractor, building mechanic and supply man will be willing to give good terms in order to take advantage of this last opportunity to try to round out a fair year's earnings.

Much of the advance made by construction costs over pre-war levels, has been retraced. It is doubtful that building costs will go very much lower next spring. Hence, with the better terms that will be possible, due to conditions included above, it should be possible for a prospective builder to drive a very good bargain this fall. Manufacturers and dealers might well consider this fact and if they agree, why not use it in the publicity to secure fall business.

* * *

SUPPORT THE A. C. S.

THE AMERICAN Ceramic Society has a world-wide recognition as a high powered scientific society. However, in some places even in the United States, it has been merely heard of, is not known, is misunderstood and not supported even in the industries in whose fields the activities of this society lie.

The need for greater economy in production and improvement of product and the keen competition which exists today makes necessary more technical aid. The recent appointment of an organizing secretary by the American Ceramic Society puts that organization on a plane where it is far better fitted to serve its various members and industries than heretofore.

In order for the society to serve best it is necessary to have the full support of the industries it serves. With an increased membership making possible larger funds and with the society better organized as it is now, there should be far greater development in the ceramic fields and this is very welcome.

It should be the duty of every ceramic manufacturing concern to aid the American Ceramic Society and ceramic employers should become associate or active members in the society. There is no other agency so organized to serve the ceramic industries in technical furtherance and research, as the American Ceramic Society.

ARE YOU THE EXCEPTION?

Pessimism Rot Shattered by the TNT of Inside Facts—Interviewer Discovers Curious Phenomenon—Is It a Hot Weather Microbe?—What Everybody Thinks of the “Other Fellow” Seems to be Plain “Bunk” — Business “Good” and “Getting Better”

H ONESTLY, I'VE LISTENED TO THIS TALK about business depression so long and from so many different angles and so many different people whose faces range from long to real long, I've just got to break loose with a few remarks or swell up and burst. These

The tire industry at Akron, Ohio, is operating at almost the same figure at which production stood in 1918, which may in a sense be called normal, says the Wall Street Journal, and the following figures are given:

Brand	Daily Output 1918	Daily Output Today
Goodyear	26,000 tires	25,140 tires and 30,000 tubes
Firestone	22,000 casings and tubes	23,000 casings and 25,000 tubes
Miller	3,500 tires	4,500 tires
Goodrich	20,000 tires	17,000 or 18,000 tires
Kelly-Springfield	1,500 tires	Has been increased and factory is over a month behind in orders.

remarks are just a few from a “free lance” who makes trade publications his specialty.

Right off the reel, you will say what right has that darned simp to tell business men what is wrong with them? He is not in business—he only writes yarns about men who are in business. You are mistaken. I am in business. I am in the business of getting at the facts which face men in more than five score of American industries, and passing them on for the benefit of all the rest. Unless my findings tally with the facts, I lose my audience.

Frankly, here are a few things I have found out.

“BUNK” ABOUT HARD TIMES

A lot of this bunk about a business depression is not to be believed.

That is a pretty strong statement and lots of times it is not your fault if you are guilty of spreading this stuff about dull business.

You have heard it so many times you actually believe it in

spite of the fact that the figures in your business won't justify anything but a broad smile. Think it over.

Look at the figures and compare them with the first six months of last year. Then compare them with the last six months of last year. It is not to be supposed that you will publish these figures, but for the mental attitude, just ask yourself if business continues to show the gain during the next six months that it has during the last three, how the total volume of business will stack up this year with 1920 when the big slump came in the last half?

A GLIMPSE OF 110 DIFFERENT TRADE ANGLES

I write for about one hundred and ten prominent trade papers in a city of approximately 325,000 population.

Each publication is in a different classification and it is one of the duties at least once a month and in some cases oftener to see the leading men associated with the different business classifications.

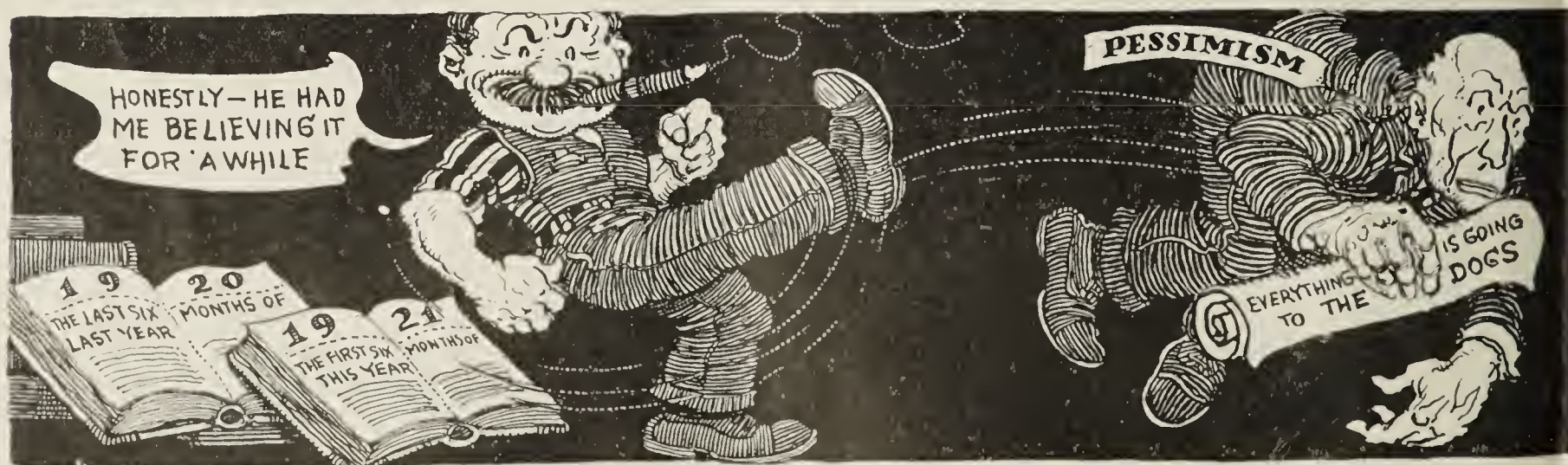
As a result these same men more than often confide to me many of their business secrets. They are not backward in telling in percentages how their business is coming along.

AN AVERAGE CITY OUTLOOK

This particular city is no more fortunate than any of the larger cities of the country, its factory executives are no

It is reported from Cleveland that the output of the Jordan Motor Car Co. for the next four months has been sold and that production at capacity will be maintained. During the second quarter of this year the company shipped ten per cent. more cars than it did during the same period of 1920.

more efficient, its business men are no better and work no harder than they do in other cities and the public is no different. That is why the general business conditions as they are in this city can be taken for a fair comparison with other similar cities.



Kick the Pessimist in the Most Convenient Spot, and Go to Work for More Business

THE CITY'S FAVORITE INDOOR AND OUTDOOR SPORT

Just now the favorite indoor and outdoor sport as well is to complain of business—it used to be to cuss the weather.

Ask any business man how business is, or its prospects for the rest of the year, and without even thinking, he will pull a long face and tell you it looks bad.

It's habit. He knows, if he has taken an inventory, that it is better than he expected, and down in his heart he is confident it will get better as the year goes on. There is

The Iron Trade Review in its August 18 summary of conditions says:

"The upturn of quotations is reflected in this week's composite market average, which is \$36.03, against \$35.82 for last week. This is the first time the average figure has shown an increase since April 13, 1921, when at \$44.93 it exceeded the level of April 6 by seven cents.

"From the standpoint of inquiries and orders the pig iron market is more active than at any time for weeks. From 20,000 to 25,000 tons were sold in Buffalo during the last seven days. Stronger demand for steel making iron is seen in the Pittsburgh and Valley districts. The price of basic has advanced from \$18 to \$20, valley."

nothing really fundamental that would indicate anything else. But he has the habit and he spreads gloom just as it has enveloped him because of others.

TALKING WITH "YOUR BANKER" AS PAINFUL AS VISIT TO YOUR DENTIST

In our town it is a well established habit for a business man to go around and have a little confidential chat with his banker about every so often.

For nearly a year they have left the banker's little private office feeling like suicide was an easy way out.

With all due respects to bankers and the importance of banking to business, bankers as a rule seem to be, at least at present, the world's prize pessimists.

If you want to borrow money, for heaven's sake take the old financial statement around, stop up your ears with wax like Ulysses of old, and do all the talking.

If you don't, nine times out of ten you will leave after having secured the loan with the firm conviction that your banker has done you a personal favor that he would not have done for anybody else and that in place of making him money, for lending is how he makes his money, you have all but severed his right arm.

I MADE A STARTLING DISCOVERY

Then I made a discovery. It was so amazing a find that I have to pass it on.

Go in to most any business man and on the slightest provocation, he will proceed to spill his tale of woe in a way to shatter all your hopes, and turn the very atmosphere to indigo.

Then, if by chance you happen to switch the topic to a personal inquiry, you'll get the shock of your life. In nine

The Brier Hill Steel Co., of Youngstown, Ohio, has advanced the price of standard basic pig iron to \$20 a ton. This is an increase of \$2 a ton over the low quotation. No lower priced business will be considered by the company.

cases out of ten *this same man* will tell you in strict confidence, if you know him well enough, that his particular business is good, better than he expected and in many cases—

not a few—he will tell you that he has made a gain over last year.

The popular belief on the part of Bill Jones, who conducts a business in this block, is, that while his business is good, John Smith down the street is just two laps ahead of the receiver's court.

If you go down to John Smith to get a little advance information about this receiver, you are astounded to learn that business is good, better than he expected. More than likely he has made a gain over the same period of last year, but Bill Jones—Bill's business—he understands, is poor and the worst can be expected.

How in thunder can we get anywhere with such a condition? How can business men expect the public to have confidence in them when they are so free with their pessimistic lingo?

REVERSING BANKER'S TALE OF WOE

But to return for a moment to the banker. I happen to

"Wholesale dry goods business is now feeling the impetus of the early fall merchandise demand," according to John V. Farwell Co., of Chicago, in their weekly review of trade. "Buyers are in the market in much larger numbers than during August of last year. Comparing with corresponding week of last year sales are about thirty-five per cent. ahead and road orders are almost double in number.

"Market on cotton and wool goods is firmer and in some lines advancing. Yarns are higher, firming up the market on knit underwear.

"Retailers are cutting up outing flannels very freely.

"Blankets are in good immediate delivery demand for retailers' August sales. Mills are behind in deliveries."

write for a New York financial paper and just recently went to a bank president's office for some information.

The information obtained, the conversation drifted to business conditions. He informed me that from a general standpoint it looked bad. Credit, he said, would continue to contract.

I wondered how he could speak with such authority. Times would get worse before they got better. Now was not the time to launch out into any new enterprise, etc., ad infinitum. Then I tried my magical, newly discovered interrogation. His

According to an announcement made by Bradstreet's on August 12, a country-wide building boom is indicated. Reports from the large cities throughout the country show a 32.5 per cent. increase in building permits for last month, as compared with July, 1920. A total of \$141,632,525 is involved. During the last sixteen years July totals have exceeded last month in the number and value of building permits issued only five times.

bank had just completed the first six months and I asked him how the bank's business was!

You could have felt the change in atmosphere. It began to warm up immediately. With a very expansive smile he declared that his bank had made a "wonderful" increase! An increase that affected every department. The savings accounts, Oh boy—but why go on? You get what is meant.

Yet this man can discourse for a half day on the business depression!

THE WALL STREET HUMBUG

We hear business men talk hopefully about what Wall Street is liable to do, leading every one to believe that if Wall Street wanted something to happen, it would happen.

Bankers know differently. They know the ordinary individual with the ordinary savings account wields the financial club in this country and in his community, so it is quite natural that the banker would like to have a good healthy hold on this club.

Partially from habit, as in the case of the business man, and partially for so-called "business" reasons, he pulls the long faced stuff and the small investor just naturally puts his surplus into the savings account and does mighty little toward financing any business or industrial project, and less toward spending.

LOOK AT YOUR BOOKS, AND GO AHEAD

What we need is for business men to look at the books, compare the first six months of this year with the last six months of last year, estimate the gain for the next six months by means of the gain of the last six, plaster a smile all over their faces, kick the pessimist in the most convenient spot, and go to work for more business.

After last year, it may be hard for a while to lay aside the golf clubs and work, but it's got to be done.

A man here said the other day in complaining of business, "It just isn't coming in." Think of it—it *wasn't coming in*. And now if it came in it would not find him at home, for he has gone to Maine for the summer.

* * *

Review of Building Situation

The "Survey of Current Business" for July, 1921, a monthly report issued by the Department of Commerce of the United States, contains some very interesting figures on building in 1919, 1920 and 1921. The figures given pertain to states east of the Mississippi and north of the Ohio rivers, but it is probably safe to say that they are a fair indication of the construction situation of the whole country.

The following table gives the monthly averages for 1920 and 1921 showing the number of projects, number of square feet and value of all classes of construction projects:

	Number of		
	Projects	Sq. Ft.	Value
1920			
January	3,906	41,952,000	\$226,116,000
February	3,504	34,914,000	200,757,000
March	5,367	54,495,000	302,133,000
April	6,742	50,962,000	304,974,000
May	6,193	41,306,000	246,935,000
June	5,584	36,979,000	260,111,000
July	5,131	27,745,000	204,498,000
August	5,129	28,220,000	202,652,000
September	4,758	25,832,000	178,179,000
October	4,449	25,469,000	177,758,000
November	3,839	18,802,000	128,966,000
December	3,249	13,926,000	100,145,000
1921			
January	2,834	15,359,000	111,608,000
February	3,361	16,772,000	100,677,000
March	5,981	26,703,000	164,092,000
April	7,176	34,471,000	220,886,000
May	7,530	35,731,000	242,094,000
June	7,919	35,738,000	227,711,000

The averages for the entire year are as follows:

	Number of		
	Projects	Sq. Ft.	Value
1919 Monthly average....	6,862	46,333,000	\$214,990,000
1920 Monthly average....	4,821	33,383,000	211,102,000
1921 Monthly average....	5,800	27,462,000	177,844,000

A study of the tables will show that the rise in prices in 1920 over 1919 is apparently reflected in the monthly average for the entire year. Reduce the figures to a square foot

basis and you have \$4.64 as the price of a square foot in 1919; \$6.33 in 1920 and \$6.40 in 1921. The 1921 figures are for the first six months only.

On comparing the averages for the last six months of 1920 with the first six months of 1921 it is encouraging to note the period during 1921 shows a higher monthly average. The 1920 average is \$165,366, while that for 1921 is \$177,844. The construction industry is slowly coming back and the monthly totals now compare very favorably with those of last year.

* * *

Geo. C. D. Lenth Succeeds Late Geo. H. Tefft

At a meeting of the Executive Board of the Clay Products Association, held August 15, at their offices in Chicago the selection of George C. D. Lenth as secretary to succeed the late George H. Tefft was announced. The appointment became effective immediately and Mr. Lenth entered upon his duties that day.

The new incumbent is a graduate of the Massachusetts Institute of Technology of Boston, which is recognized as the foremost engineering college in the country. During the past sixteen years Mr. Lenth has been connected with the engineering work of the city of Chicago. The first five years of that time was spent as Division Engineer of the northern district of Chicago. Later he was promoted to the position of engineer of the Board of Public Improvements, and eight years ago became chief engineer of sewers of the city of Chicago. In this position he has had complete charge of more than 1,000 miles of sewers.

This extensive experience in sewer inspection and construction coupled with several years spent previously in railroad and general engineering gives to Mr. Lenth valuable



GEO. C. D. LENTH

knowledge of just the right kind of information that he will need in his new position, to continue and enlarge the work so ably started by Mr. Tefft. He is a member of the American Society of Civil Engineers, the Western Society of Engineers, and The Illinois Society of Engineers. He is also a licensed structural engineer of Illinois.

The birth of the Clay Products Association occurred in the fall of 1917. At that time the late George H. Tefft resigned his position as sales manager with the Walter S. Dickey Clay Manufacturing Co., to take charge of the interests of the western sewer pipe manufacturers. This resulted in the merging of the International Clay Products Bureau, and several

smaller organizations into what is now known as the Clay Products Association.

The association was formed to work hand in hand with the eastern association in the promotion of vitrified, salt glazed, sanitary sewer pipe, segment block and other products manufactured by its members. Another purpose of the organization was to create and maintain high standards of manufacture.

Mr. Tefft has vigorously followed out the first named purpose of the association and the literature advertising vitrified products has been before the eyes of prospective purchasers and interested individuals for the last four years.

The Clay Products Association has done and is still doing great work in cooperation with the United States Public Health Service and state and local boards of health for improving

sanitary conditions, and with the National Board of Fire Underwriters to bring about better construction of buildings, especially chimneys, by securing the enactment of state laws, city ordinances and building codes requiring the use of fire clay flue lining and thus reducing the enormous waste and loss of property by fires that are caused by defective flues.

* * *

Ceramic Covering for Concrete Buildings

Professor Heresford Pite, an architect of London, England, is advocating the covering of reinforced-concrete buildings with a coating of ceramic products, to relieve the bare concrete surface. It is held that a permanent, effective and attractive application of ceramic color can be given, practically unlimited in its variety and value.



NEW YORK BUILDING MATERIAL PRICE WAR INCREASES DEMAND — QUOTATIONS REBOUND

EFFORTS made to sound the building industry with respect to what may be expected in the way of strength of prices or activity of demand this autumn and winter developed these results, the Dow Service daily building report for August 13, says:

Railroad purchases have been primarily responsible for the firmer tone in building material prices. This probably will be developed to the point of actual price advances in some equipments and building materials during the next six weeks. Some materials have already stopped selling at lower-than-list prices. Some have actually advanced, not only at source, but in the centers of distribution.

1921 CATCHING UP TO 1920 LEVEL

Secondarily, the change has been brought about by improved demand from the building industry itself. The month of June for the country as a whole showed gains over the same month last year by twelve per cent. in actual building permits granted. It showed a gain over the previous month this year of 2.9 per cent. which will, at this rate, soon wipe out the loss of 16.5 per cent. in total construction records for the country as shown between the first six months of 1921 compared with 1920.

If this gain continues in building and railroad purchases even approach the estimated total of \$2,500,000,000 worth of supplies, which will be largely represented by commodities which also enter more or less generally into building erection and equipment, there will not be the least possibility of building materials remaining at existing levels. The pressure is being felt at some sources of supply already.

LUMBER STOCKS DOWN VERY LOW

There is a car shortage already in the southern lumber regions. Southern Pine Sales Corporation, one of the largest eastern lumber distributors, in announcing a new list of prices all of which show advances over previous lists, said that the cost of production is now higher than present market prices. Stocks are approximately at demand levels, in cases where retail lumber dealers, box makers, industrial concerns and railroads are being catered to, in all of which channels stocks on hand have been cut so low as to make immediate purchasing necessary.

Cement shipments for June, 1921, were over 10,500,000 barrels. This record exceeds shipments for June, 1920, the best previous year. It exceeds the best record for the month of June prior to 1920 by 1,250,000 barrels. Ship-

ments of this commodity even before the railroads began to appear in the market were almost two million barrels greater than the average for the first six months of the last five years.

AVERAGE COMMON BRICK PRICE, \$14.49

The common brick industry, the second basic building commodity as shown by the Common Brick Manufacturers' Association's national roll call, is shown to have reduced stocks on hand by reason of the fact that this industry was hardest hit by the early year building slump. Furthermore price shrinkage in this industry has proceeded to such an extent that the national composite price today is \$14.49, delivered from yard to truck for haul to job-site.

In Ohio certain lime interests recently decided to start a price war. It was felt to some extent here, but no sooner had it started than the turn in national building material buying became so apparent that the differences were lost sight of in a scramble to recover some of the price they had previously been willing to lose. In other words, \$2.50 was clipped off the price at wholesale and hardly had the price been sent out to the markets than another change was announced restoring \$1 of the original cut. Altho local dealers responded to the price drop they have not so far made any change in the distributed quotations.

HOLLOW TILE PRICE MAY RISE

Hollow tile, selling from two to three cents below gypsum block in this market, is firm at present list prices and may go up. Formal quotations were withdrawn in this commodity recently, those appearing in the formal lists being at present merely nominal.

Gravel price cuts have drawn in the crushed stone quotations but the market in general complains that there is no margin whatever in selling gravel or crushed stone at \$1.60 to \$1.80 a yard. Some of the dealers have advanced their minimum prices five cents, but even this does not offer a living sustenance over cost.

Common wood lath is becoming both scarce and high. The current list puts this commodity at \$10.50 a thousand, but there are some dealers entirely out of spruce lath and it is quite sure that a turn upward will be reported in this item. Common brick is steady at \$15 but some of the manufacturers have been talking of asking a higher figure because of the greater demand and lower supply than even a normal winter's requirements would warrant.

SUCCESSFUL OPERATION *of* WASTE HEAT DRYER

Charts Showing Effects in Variations of Humidity in Atmosphere—List of Fifteen Important Items on Which Information Should Be Gathered and Operations Based

By J. H. Kruson, Cr. E.

Acme Brick Co., Fort Worth, Tex.

THE DRYING OF CLAY WARES is much more of an intricate and individual problem than is generally realized.

The waste heat progressive type of dryer is readily being approved and installed in most new plants and on many old yards, due to the cheapness of its operation, ease in handling and good results obtained. Many dryers have been built without any knowledge of drying characteristics of the clay, and as a result, some are experiencing more or less difficulty in drying their clays fast enough to run their plants to capacity.

DESIGN OF DRYER GOVERNED BY CLAY

The dryer design depends upon the drying properties of the clay and also upon the nature of the ware manufactured. Checking up dryer conditions, dimensions of heat and air passages, drying characteristics of the clay and making such changes that are necessary, will reduce dryer loss and often increase the dryer turnover, which is an important factor where the capacity of the plant depends upon the dryer turnover.

The air drawn from cooling kilns thru tunnels and ducts, and blown into the dryer, acts as a transporting agent in carrying the moisture away, as it is evaporated from the ware.

The size of these heat and air canals depends upon the amount of moisture in the ware, temperature, humidity, speed of incoming air and dryer construction. Tunnels and ducts should be of sufficient size to furnish an abundance of air under any ordinary circumstance, without operating the fans at an excessive speed.

WORKMEN SHOULD BE CAREFUL

A little careful attention on the part of workmen in closing dryer doors and unused openings into kilns or manholes tight, will save considerable power and maintain a more even distribution of air and heat thru each tunnel.

There is a wide variation in the methods used for admitting and distributing the hot incoming air in the tunnels and also in arranging exhaust ducts. Their arrangement should depend upon the drying characteristics of the clay, kind of ware and circulation of air (horizontal or vertical). From some installations, good results are claimed from one feed duct located at the end between the tracks of a double tunnel and with similar exhaust ducts. While others use feed ducts under each track with proportioned openings to the exhaust flue. The majority of dryers are equipped with ducts from one-fifth to one-third of length.

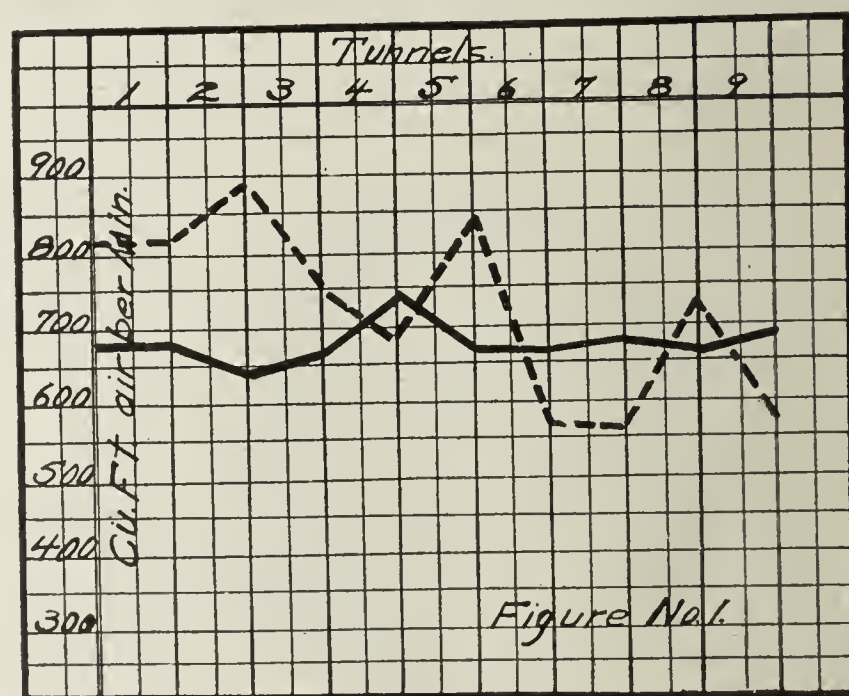
LOCATION OF EXHAUST DUCTS ESSENTIAL

The location of exhaust ducts in the receiving end is an essential factor in drying most clays and in dryer turnover. Some plants use exhaust ducts with graduated openings which

extend to the center of the dryer, while others use only one which opens directly into the exhaust tunnel. Many locate these ducts and waste heat tunnels one or two car lengths from the door, leaving a dead air and warming up space.

The elimination of unnecessary bends, corners, constricted areas and rough surfaces from the flue system will help to reduce the friction.

Usually, a considerable amount of water seeps into the underground tunnels and flues, due to their size, length and construction. The proper drainage of these tunnels is just as essential as that of kiln bottoms or even more so, as the hot air takes up moisture in the flues, thus entering the dryer



Showing the Comparison of Volume of Air Passing Thru Each Tunnel. The Broken Line Represents the Condition Before Regulation and the Solid Line Represents the Condition After the Regulation of the Dampers.

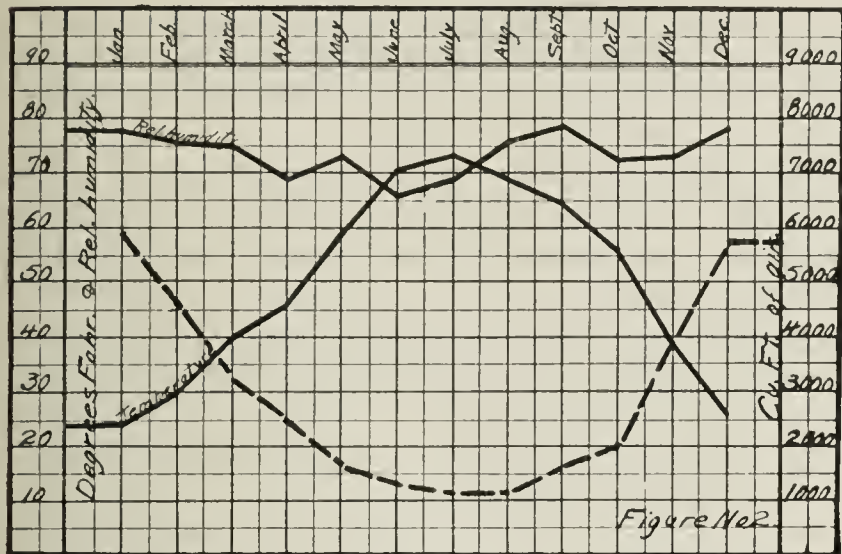
in a saturated or nearly saturated condition. It is a frequent occurrence to find waste heat tunnels used also as a drainage system for all or part of the yard.

INFORMATION GOVERNING EFFICIENCY OF DRYER

The following information should be gathered and carefully studied as it covers the most important areas, tunnels, ducts and openings which govern the efficiency of the dryer.

1. Number, length and size of heat ducts from kilns and auxiliary furnace to the main tunnel.
2. Length and size of main tunnel to suction chamber. Number of bends and turns.
3. Size and area of suction chamber.

4. Size, speed, type of intake fan and area of opening into fan.
5. Size, area and length of tunnel from fan to last feed duct opening into dryer. Number of turns.
6. Number, area of ducts or duct leading into each tunnel.
7. Number, size and areas of openings into each tunnel. Also, distance of openings from dryer door.
8. Total area of each tunnel.
9. Total area under cars, on sides and from top of ware to



The Solid Lines Show Average Monthly Temperature and Humidity. The Figures at the Left of Chart Are Used to Show These Variations. The Broken Line Indicates the Volume of Air Required to Hold One Pound of Moisture Under the Conditions Indicated by the Solid Lines. The Figures at the Right of the Chart Are Used to Show the Variations in This Line.

ceiling (or if bafflers are used—to baffler). Also, distance between bafflers.

10. Length of dryer tunnel and number of cars each tunnel will hold.
11. Number, size and area of openings into exhaust ducts or tunnel. Distance of openings from door. If dampered, size and area of openings.
12. Size and area of exhaust ducts and tunnel.
13. Size and area of suction chamber of exhaust fan.
14. Size, speed and type of exhaust fan. Also, area of opening into fan.
15. Size and height of exhaust chimney.

VOLUME OF INCOMING AIR

The volume of air necessary to operate a dryer to capacity depends upon the amount and rate of evaporation of moisture from ware, temperature of incoming air, amount of moisture it takes up and percentage of saturation of the exhaust atmosphere.

Unless there is a free circulation between the ware, a stagnant saturated condition will exist, resulting in a retarded or non-drying condition, which depends upon the rate of air movement.

The direction of air currents is governed mainly by dryer construction. Most ware, especially hollow tile, dries faster, with less loss, in a more vertical circulation than in a horizontal. Undoubtedly, for this reason, some dryers that operate successfully with brick, will not dry hollow ware without a loss that will prevent manufacturing. However, there is a wide variation in dryer regulation between hollow ware and brick. Also, some clays will dry in one kind of ware and not in another.

CHECK VOLUME OF AIR WITH ANEMOMETER

The variation in volume of air passing thru the tunnels is seldom considered until spoiled or wet ware is found in quantities. The volume can be accurately checked with an anemometer.

There should be an even number of cars in the tunnels and all doors should be closed so that there will be an equal amount of friction thru all tunnels and no air other than the incoming air will escape from or enter the dryer.

The broken line in Fig. 1 shows the different volumes of air thru each tunnel in cubic feet per minute before regulating the volume.

If the feed or exhaust ducts are filled up or are too small, the trouble is easily located and the remedy obvious.

The solid line in Fig. 1 shows the volume thru each tunnel after regulating the dampers with an anemometer. The excess volume passing thru number four tunnel is due to the fact that the tunnel lacks three cars of being filled.

TEMPERATURE AND HUMIDITY

Sheet iron dampers over the exhaust ducts make a very satisfactory method of regulating the volume of air which passes thru each tunnel.

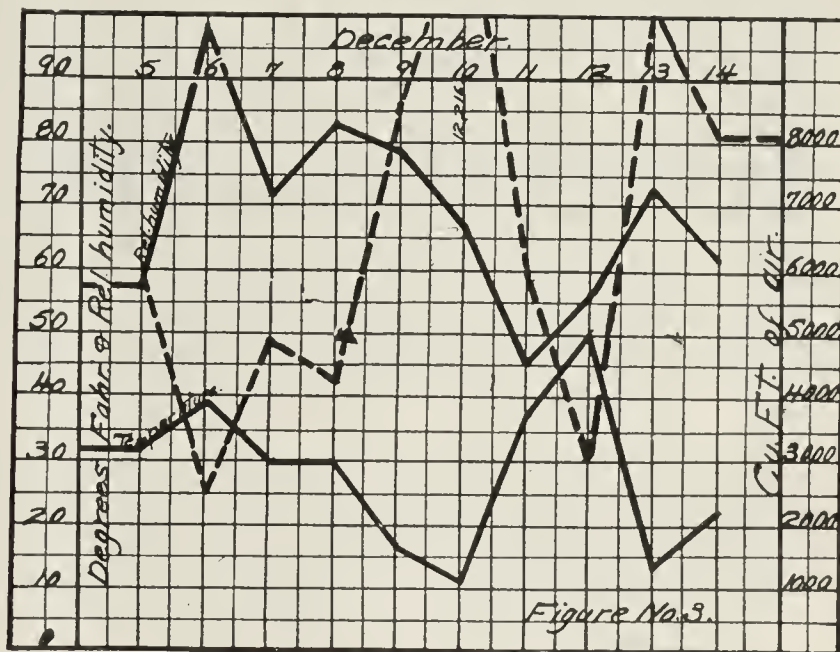
A recording thermometer located a foot or two beyond the fan is generally used to record the temperature of incoming air. There is such variation between the temperatures at the fan and in the hot end of the dryer, that the latter should be taken daily, one or two car lengths from the door.

The temperature of incoming air governs the rate of evaporation. When there is an insufficient volume of air or circulation to carry the moisture laden air away, the atmosphere becomes saturated, depositing the moisture on dryer walls and ware.

The temperature maintained in the dryer depends mostly upon the drying qualities of the clay, also, upon the humidity and volume of incoming air.

HUMIDITY OF EXHAUST ATMOSPHERE

The humidity of exhaust air is usually measured with a wet and dry bulb thermometer and expressed in percentage of saturation. These readings should be taken one or two car lengths from the door. As the ware enters the dryer it is generally cooler than the dryer atmosphere. During the warm-



The Lines and Governing Figures in This Chart are the Same as in Fig. 2, But the Period Shown Here Covers Only Ten Days in December Instead of Monthly Averages.

ing period, the clay particles become more porous, which allows a faster movement of moisture to the surface.

Due to their physical properties, clays may be divided into three groups as regards their drying behavior. There is no marked line of separation between the rough classification which follows:

- A. Clays that will dry rapidly in a circulating atmosphere.

B. Clays requiring a low temperature in a saturated or nearly saturated condition, on entering a moving atmosphere.

C. Clays requiring a heating chamber in a stagnant, non-drying atmosphere before they enter a slow drying atmosphere.

The time required to dry most clays ranges from twenty-four to seventy-two hours; however, some clays refuse to dry safely under any condition.

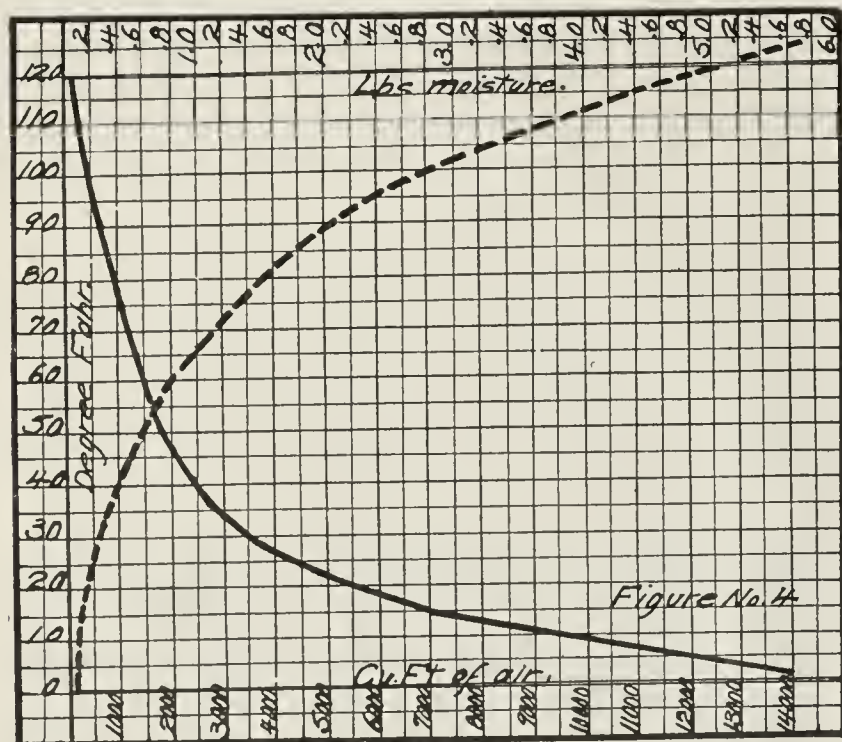
Even tho a clay may not require a high humidity or a saturated atmosphere in the receiving end of dryer, the higher the humidity the greater the economy of operation.

WEATHER CHANGES AND CONDITIONS

The sudden changes in out-of-door temperatures and humidities as well as season changes, have marked effects upon dryer regulation.

Fig. 2 shows the average temperature and humidity, by months at 7 a. m. (as recorded by a station of United States Weather Bureau). The broken line represents the volume of air required to hold one pound of moisture under the average monthly conditions. For the month of January, 5,983 cubic feet held one pound of moisture, while in July only 1,127 cubic feet were required to hold the same amount—a difference of 4,855 cubic feet in volume, or 81.1 per cent.

The vapor capacity of 1,000 cubic feet of air under the av-



The Broken Line Indicates the Vapor Capacity of 1,000 Cubic Feet of Air When Saturated. It Is Plotted from the Figures at the Top and Left of Chart. The Solid Line Indicates the Volume of Air Required to Hold One Pound of Moisture at Different Temperatures. It is plotted from the Figures at the Left and Bottom of Chart.

erage temperature and humidity for January was .176 pounds of moisture and for July .865 pounds.

When saturated at 100 deg. F., 1,000 cubic feet of air will contain 2.92 pounds of moisture.

DIFFERENCE IN VAPOR CAPACITY

The difference in vapor capacity between the average conditions and under complete saturation (for January) at 100 deg. F. for 1,000 cubic feet of air was 2.744 pounds of moisture and for July it was 2.055 pounds—a total difference of .689 pounds per 1,000 cubic feet, or 25.1 per cent.

Fig. 3 shows the relative humidity and temperature from December 6 to 14 (inclusive) at twelve o'clock—noon, and the broken line shows the volume of air necessary to hold one pound of moisture under the above atmospheric conditions.

The vapor capacity between the atmospheric conditions and complete saturation (on December 6) of 1,000 cubic feet of

air at 100 deg. F. was 2.53 pounds; while for December 10 it was 2.839 pounds of moisture—a difference of .309 pounds in vapor capacity, or 10.8 per cent. The difference between December 10 and 12 was .237, or eight per cent. These variations in vapor capacities of the atmosphere are only average season and daily fluctuations. In some localities the difference may be small, while in others the fluctuations are much greater due to weather conditions.

CAPACITY OF DRYER

As weather conditions change, some adjustment must be made in temperature or volume of the incoming air of the dryer, in order that an even amount of moisture be evaporated and carried from the dryers daily.

The broken line in Fig. 4 shows the vapor capacity of 1,000 cubic feet of air when saturated. The solid line shows the volume of air required to hold one pound of moisture at different temperatures.

The advantage of keeping the temperature of incoming and exhaust atmosphere as high as the clay will stand, can be readily seen from this figure.

The turnover depends upon the time required to safely remove the moisture from the ware.

The time necessary may be determined by keeping accurate records. The following list contains some of the most important information necessary and should be recorded daily.

1. Temperature of incoming air at fan—every six hours.
2. Temperature in hot end of dryer.
3. Speed of intake and exhaust fan.
4. Temperature and humidity of exhaust air.
5. Atmospheric temperature and conditions.
6. Position of wet ware.
7. Position of cracked ware.
8. Total loss.

PREPARE STANDARD SCHEDULES

By keeping the above information and making changes in volume and temperature of incoming air, the maximum temperature and volume that the ware will safely stand, can be determined.

From these results, standard schedules may be prepared, which will insure the best drying conditions possible, without endangering the ware. Considerable time and work will be required to bring the drying time to a minimum as changes should be made gradually and their results accurately determined, before further experiments are started.

Frequently, cracking occurs which is not due to improper dryer regulation and as a result considerable difficulty is experienced in finding the underlying cause or causes.

Such losses, due to lamination, defective or insufficient pug-ging, improper mixing of clays, machine pressure, poor grinding or screening, and unsuitable clays, are not dryer faults. However, rapid drying will aggravate these defects and often losses due to the above causes are traced no further than the dryer, when the basic cause lies in the earlier stages of manufacture.

* * *

Kentucky Is Investigating Her Clays

Kentucky is beginning to wake up to the fact that she owns some very valuable mineral deposits such as fine clays, shales, oils, coal, etc., especial attention having been given to clay of late. The State Geological Department has been making some surveys, and giving out a good deal of information on clay, and the newspapers have not only been using this publicity, but also carrying a good deal of editorial material relative to the hidden natural resources.

U.S. METHODS REPLACE HAND LABOR *in* INDIA

Wealthy Chinese Brick Manufacturer in Singapore Installs American Machinery—Labor Cost Only Forty-Seven Cents Per Day

By Carolyn A. Wilson

Editor's Note—Miss Carolyn Wilson is probably familiar to a number of readers of BRICK AND CLAY RECORD thru her affiliations with the Chicago Daily "Tribune" as war correspondent. Miss Wilson is now making a tour around the world and has sent us this very interesting article from Singapore, India. The article is especially interesting in that it shows the steady progress of the clay industry and the respect and confidence foreign business men have for American methods and ingenuity.

THERE IS a growing tendency all over the Far East to start brick and tile factories after the American plans of modern machinery and large output and also to make standard Portland cement. Naturally there is an enormous demand for both brick and cement in all the countries out here, where heat and rain and the ravages of insects make wooden houses almost impossible.



Mr. Lim Low, Wealthy Owner of the Lim Low Brick Works, of Singapore, India. Mr. Lim Low is a Chinaman.

Up to a couple of years ago, all this material was imported, mostly from Hong Kong and Indo China, and when brick were made in India or the Straits Settlements they were crude

rough things with none of the fineness of the modern product.

One of the most entertaining contrasts in periods is the Lim Low Brick Works, about eight miles out of Singapore, where side by side are American machinery and modernity and opposed are the methods of Pharaoh and the children of Isreal.

MODERN AND ANCIENT METHODS BOTH IN USE

Over on this side you see a Bessemer gas engine from Grove City, Pa., and just beyond is a coolie slapping clay into a wooden mold and evening it off with a wire string held taut in a bow made of a willow stick. In another corner you see the International Clay Machinery stamped proudly Dayton, Ohio, and then you smile at the picture of the great heavy slow moving carabao tramping endlessly around in their tiny holes working the clay.

And under every shed is a coolie turning out a leisurely 500 brick a day unaware of the fact that the American machinery now being put into place will turn him out of his job.

The owner is a genial pottering Chinaman who can neither speak or read English but who goes around all day with the English plans and specifications in his hand rolling and unrolling it and looking wise as the American engineer explains the intricacies of the American engine to the Chinaman's two sons, who appear to be on friendly terms with valve cocks and cylinders.

The old man is fabulously rich, even in a district where most of the Chinese have made a lot of money and are the really wealthy members of the community. And most of it has been made on an output of 300,000 brick a month. And what brick! They are rough, unkempt, unpressed, but they sell, so great is the demand. They have to be faced, of course.

LABOR FORTY CENTS A DAY

But with this new factory his profits should increase many fold, for costs have gone up but little for him except coolie labor, which is now \$0.47 a day. The price of brick, however, has risen from \$7 a thousand in 1914 to \$11.50 in 1918 and \$20 now. By his new installation he will turn out 1,800,000 a month and 250,000 French roofing tiles.

So it is not to be wondered at that he patters around endlessly waiting for the machinery to start, the belts to purr, and the money to roll in.

At present there are about 100 coolies on the place, all taking their leisurely time, the twenty who make brick rarely making over fifty an hour. When the works are running there will be but twenty men employed and the output increased five times.

Each man has his own shed, a long, low palm thatched building with three clay pits on one side just big enough for a carabao to turn around in. A little naked boy brings up the ugly beast and starts him churning around and so great is habit that they keep on their slow merry-go-round tread all day.

BRICK ARE DRIED BY SUN

The brown, sticky mass is heaped on the brick maker's table and he rolls his hands and his brick mold in a fine laterite dust, then powders it over his clay with exactly the same motion that Aunt Mandy flours beaten biscuit. He slaps it into the mold, a poor shot-together box with uneven corners and wiggly sides, draws a wire string across it, tips out the brick and puts it on the floor with hundreds of others.

They stay there two or three days, then are put in the sun to dry and from personal observation of that sun I should



One of the New Kilns of the Lim Low Brick Works, Which for All Its Palm Thatched Roof Is Absolutely Modern in Its Construction.

think they wouldn't need a kiln at all. Then after five days they are packed in the kiln.

Is it any wonder that Mr. Lim Low looks with admiration at the neat little machinery from across the sea which is to replace all this?

When I was in India I found this same tendency to try out the home products for all these building materials and found that they were experimenting with their extensive magnesite deposits around Salem in Madras to make tiles and magnesite brick.

The only other magnesite comparable in purity to the Indian is of Grecian or German origin, but it is only during the past two years that it has been used much. Several attempts have been made to make cement floors of it, mixing it with sand—five per cent. magnesia for a medium quality artificial stone or fifteen per cent. for an especially strong floor.

REFRACTORIES ALSO MADE IN INDIA

Several of the jute mill floors have been made with sawdust used as filling material in place of sand, and the resulting product is springy and may be laid down without joints and fitted into any shape desired.

Tiles are made in the same way and very high grade tiles are made which have a foundation of sawdust and the cement, and then this is covered with a thinner layer having a fine

earthy material as a filler. This layer is usually given a high polish.

In the Madras Presidency there is one factory making a low grade tile by using mineral filler and bitters in place of magnesium chloride.

In addition brick for furnace linings are now being made of this material and all the magnesite brick required by the Tata Iron & Steel Works, the greatest concern in India, are now manufactured by the Kumardhubi Fireclay & Silica Works and are equal in quality to the finest imported brick.

There is nothing more interesting to an American than going thru India and Malaya and watching the people suddenly become conscious of the great riches at their own feet and set about developing them after the latest American methods. For it is always America that they emulate.



Federal Reserve Board Reports Improvement

The review of general economic conditions issued at the end of July by the Federal Reserve Board at Washington contains some very encouraging news. It should be read very carefully as the information comes from authoritative, official and disinterested sources. The report says in part:

"There has been a noticeable improvement in production of cement and structural steel as a result of the revival in building operations. Midsummer retail business," the board asserted, "has been better than usual, while the outlook for a satisfactory autumn business in a number of lines, such as knit goods and cotton textiles, was declared to be decidedly encouraging. Consumers' demands, as reflected in the volume of retail trade, continued as good as or better than at this time last year."



The Hand Molding Method of Making Brick at Present Employed in Singapore. This Man Will Soon Give Way to Modern American Machines.

Continuing prospect of excellent food crops was declared to be the most hopeful feature in the general outlook. Little change in cotton crop was noted, with about two-thirds of last year's production expected.

Price changes during the month have shown no pronounced tendencies towards greater stability. Important de-

clines have taken place in iron and steel and particularly automobiles.

Money rates have become distinctly easier, the review con-

tinued, but fluctuations in exchange and unstable foreign financial conditions have prevented any material improvement in foreign trade.



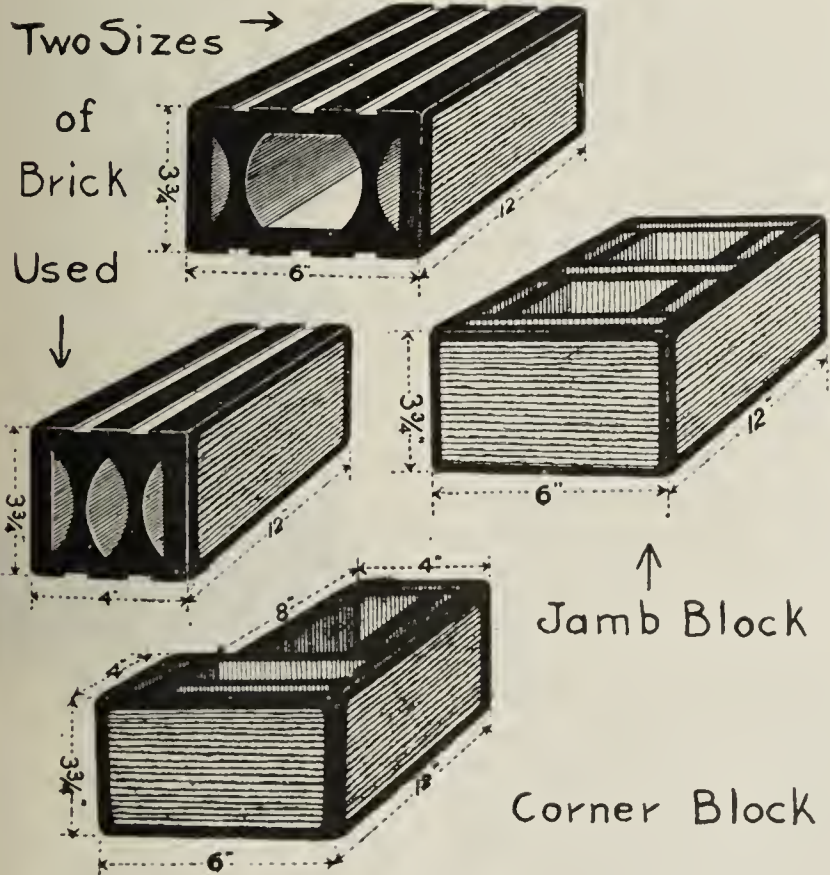
DEVISES NEW BRICK DESIGNED *to* SUPPLANT HOLLOW TILE *and* BRICK

ONE OF THE LATEST designs of clay ware to come to our attention is a special sized brick having a face and structural qualifications very much the same as the ordinary face brick. The idea had its inception in the fertile brain of F. S. Cooper, president of the Loogootee (Ind.) Fire Clay Products Co., and bears every indication of becoming extremely popular.

The block are $3\frac{3}{4}'' \times 4'' \times 12''$ with a backing up block for bungalow construction $3\frac{3}{4}'' \times 6'' \times 12''$. Both these units have a face of exactly the same texture, appearance and color as an ordinary face brick. Each block has three kinds of holes and they are laid end to end in the wall providing numerous continuous spaces of dead air. This at once stamps the wall as damp-proof, and further insures it against temperature changes, keeping the house warm in winter and cool in summer.

PLASTER APPLIED DIRECTLY TO BLOCK

"Art-A-Jax" is to be the name and trade-mark of this new product and it is derived from the two words "artistic" and "Ajax." Tho the block are manufactured on a larger scale than the standard size brick, the proportion, however, is maintained. This makes the finished wall look practically the same as a brick wall with the exception that the units present a larger face to the view.



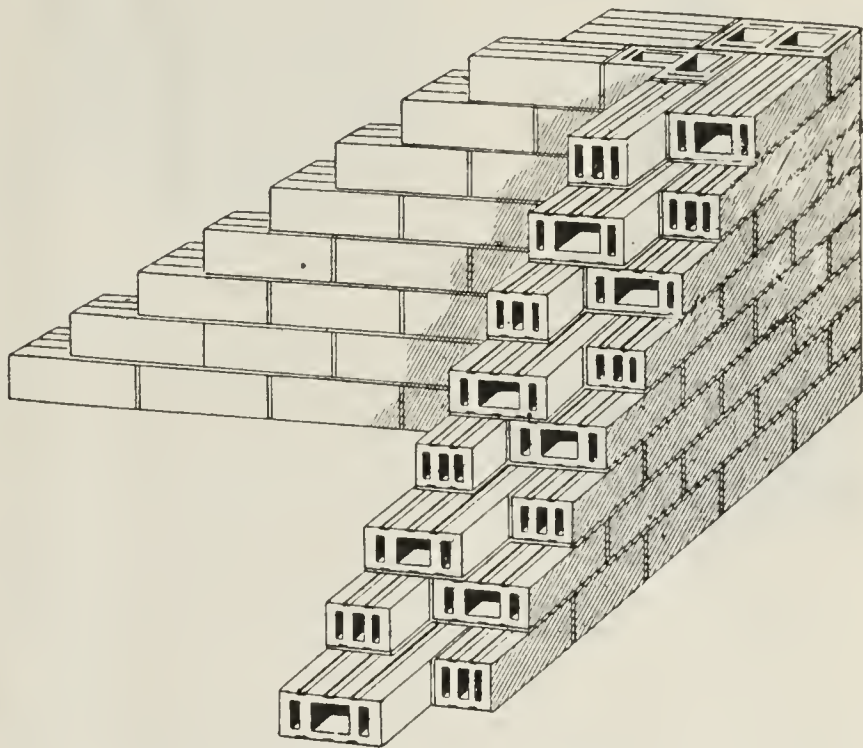
Four Types of Art-A-Jax "Brick." It is Claimed for Them That They Have an Outer Face Like Face Brick.

When the six inch and four inch block are used together, they form a ten inch wall which is claimed by the manufacturers to be as strong as the ordinary thirteen inch brick wall. The six inch block is advocated for use in private garages

and there is little doubt that the six inch wall so constructed would be strong enough for such a building.

Plaster can be applied directly to the block, which is scored on the inner surface for this purpose. If so desired stucco can be applied on the outer surface, the rough textured face presenting an admirable background to which the stucco can adhere without difficulty.

Construction of jambs and corners has been anticipated and special jamb and corner blocks are being manufactured to fill this need. Sizes for the jamb blocks are $3\frac{3}{4}'' \times 6'' \times 6''$ and $3\frac{3}{4}'' \times 6'' \times 12''$ and the corner block is made to fit to the $3\frac{3}{4}'' \times 4''$ unit. These corner and jamb blocks are of hollow, ribbed construction and



A Section of Wall Showing the Method of Laying the Large-Sized Brick. Note the Construction of the Corners.

when laid in the basement wall can, if greater strength is desired, be filled with concrete from top to bottom.

ALL COLORS OBTAINABLE

From the illustrations it can readily be seen that these "brick" present no laying problems and can in fact be placed in the wall with a very little more time than is required to lay standard sized brick. It is claimed for them that the small block displaces $2\frac{1}{2}$ brick and the larger one $5\frac{1}{2}$ brick and in addition but one-half the mortar is necessary in a wall of this kind.

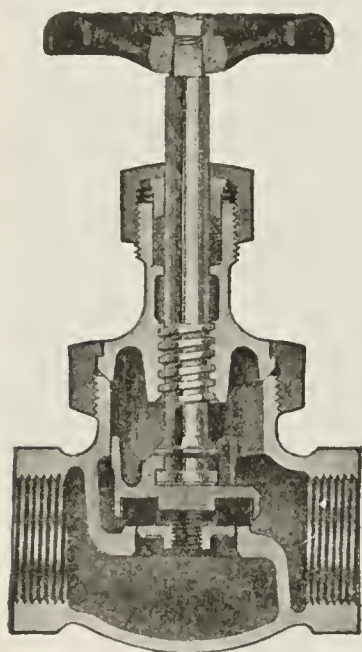
The "brick" are scored in either rough texture, fine comb scored, or rough mat finish. Any color that is possible in face brick can be secured, this new product including even the mingled shades so desirable nowadays.

Mr. Cooper has faith in the success of his new idea and is bending every effort to make the product popular and to familiarize the public with it. The plant of the Loogootee Fire Clay Products Co. is being remodeled to take care of additional output and changes are being made where necessary so that the new "brick" can be manufactured without difficulty. The idea is as yet in its infancy, tho a residence is being constructed in Loogootee where these units will be used.

IMPORTANCE *of* VALVES OFTEN UNDERESTIMATED

*Notes on the Use and Care of Usual and Unusual
Types—Leaky Valves Should Never Be Tolerated*

THE USES OF VALVES in a clay products plant are not as varied as they are in many other plants, but at the same time they are varied enough to justify special attention to many features, and we will attempt to throw some light on some of these varied uses and requirements. Globe valves, angle valves and gate valves are the types that are used generally. The first two are made with either non-renewable disc or seat, with both of these parts renewable, or with only one renewable. While the ability to renew



The All Purpose Value
—A Different Disc Is Used
for Every Gas or Liquid.

the seat affords means of having a perfectly tight joint at all times, the fact remains that the seats are changed very seldom, due no doubt, to the difficulty of removing the old seat. A renewable disc affords practically the same opportunity of having a tight joint and is changed so much quicker. Many plants have discontinued the purchase of valves with renewable seats for this reason, and are having just as good results. The brass gates of regular gate valves are also renewable, and some brands of gate valves are equipped with gates of renewable composition made somewhat like the composition discs that are renewable in a globe valve.

Instead of the hard rubber or composition disc in the ordinary valve, copper discs are used at times with very good results. They are renewable, and on account of their soft surface will make a tight fit.

REGRINDING VALVES

Some valves are made with disc and seat cut on an angle, and the disc fits partly inside of the seat. These valves are easily reground when they leak, by taking the valve apart, putting a little oil and fine emery on the surface to be ground, replacing the upper parts of the valve loosely and turning the disc back and forth until a new good joint has been made. In some makes a screw driver or a carpenter's brace and a special bit like a socket wrench are used for grinding the joint.

Globe valves should be installed so that when closed the pressure will be on top of the disc. This method reduces the chance of damage to the contact between the seat and disc, and, therefore, tends to increase the life of these parts, whether they are of the renewable, regrinding or standard types. Whenever practical angle valves should be installed in the same way, that is, with the pressure on top of the disc.

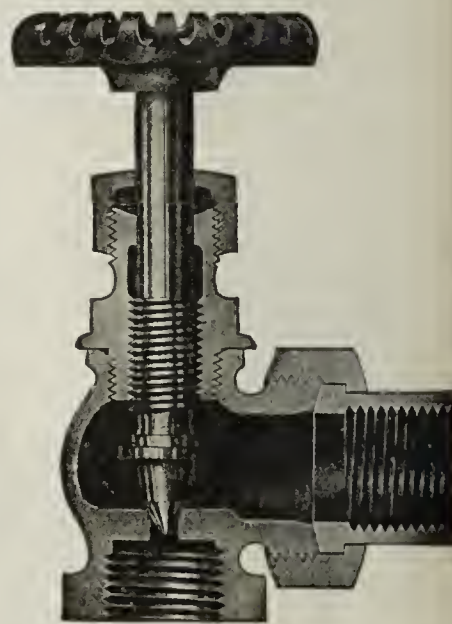
VALVE WITH RENEWABLE DISC

There is an improved type of valve on the market now, which has a renewable disc for each kind of service for

which it is used. There are three types of steam discs for different grades of pressure, one for compressed air, one for hot or cold water, and others for special purposes, such as oil, etc. This type of valve ought to become universally used because of the fact that one body will serve many uses. Another advantage of this same valve is that although the body, stem and other ordinary parts are made of brass there are three parts made of malleable iron. These are the hand wheel, stuffing box nut and bonnet ring. These three parts are made of malleable iron because it has been found by experience that these parts when made of brass wear too quickly. It is too much of a temptation for many pipe fitters to use a pipe wrench to tighten or loosen these parts, and if made of brass the metal soon gets cut up so badly that even a pipe wrench cannot move them. We might add here that it is always poor practice to tighten any valve with a wrench or pressure more than can be exerted by hand on the wheel. This, of course, is not meant to apply to valves that are operated by power. A valve which will not close without extreme pressure being exerted should have a new disc or be replaced by another valve. Tightening a valve which has any foreign matter between the seat and disc will only enlarge the trouble.

SPECIAL USES OF VALVES

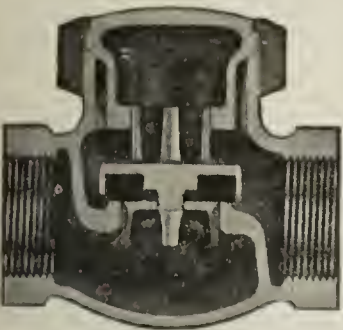
On some of the valves used around a steam plant there is little advantage to be claimed by any of several types for a particular service. This is true for check valves, where either the horizontal or swinging type will give satisfactory service, and for main boiler safety valves where either the spring or weighted type are suitable. In this connection it might be good to call attention to a safety valve which should be used on every boiler where there is more than one connected to a header. This is the type of valve called by different names by each manufacturer, which automatically closes when the boiler on which it is installed has a pressure lower than the header, and opens automatically when the pressure is equal to that on the header. When a tube blows out in one boiler this valve immediately cuts out that boiler and thereby reduces the danger from the escaping steam and water. One boiler can be entered by a man while the others are in operation, if this type of valve is in use. Records show that many boiler explosions are caused by the fact that the main valve by which a boiler is connected to the header is opened too quickly. The high



Section of Needle Valve for Accurate Control.

pressure steam from the header rushes into the boiler with lower pressure, so fast, that it causes a rapid increase in the steam generated in that boiler—an increase so rapid that the boiler cannot withstand it and the boiler explodes. The use of the valve described eliminates all danger from this source as the boiler is cut in automatically when the pressure is at the proper point by the opening of the valve.

EMERGENCY ENGINE STOP VALVE



Horizontal Check Valve with Renewable Disc.

Another type of safety valve is an emergency engine stop valve. This is generally a swing check valve, which has the check held up by a lever or catch. This catch can be released either by pushing an electric button, or pulling a cord. Either system can be used to advantage around a clay products plant. Ability to stop an engine quickly will often save large sums in accidents to men, to machinery, belts and product. The grinding machinery is usually divided by a partition from the rest of the plant and this system is especially serviceable there. This installation does not cost much and it will pay large returns on the investment. This valve can be controlled at any number of points, and is installed in the main steam line on either side of the throttle valve. The valve is installed so that, when the catch spoken of above is released, the swinging part of the valve drops and the flow of the steam exerts a pressure on the swinging check against the seat, which closes the opening entirely and stops the engine.

PRESSURE REGULATORS

Pressure regulators are a form of valve usually used for two purposes in a clay products plant, namely to regulate the steam pressure for a line going to the dryer and to regulate the pressure on the water line leading from the pump. The type of steam pressure regulator generally used is one in which the reduced pressure is exerted on one side of a diaphragm. The movement of this diaphragm controls the amount of steam which is allowed to get into this low-pressure main. Water-pressure regulators are used to prevent the pressure on the water end of a pump rising too high. They are very serviceable where a long pipe line to the digging machinery in the pit is fed from the boiler room. The pump can be connected at all times and if a valve is opened in the pit the pump starts up and closes as soon as the valve is closed. This type of regulator can also be used very satisfactorily in connection with an automatic fire system, so that as soon as the valve at a fire plug is opened the pump will start up. A very good system where the supply of water must be pumped from a reservoir or well is to have this pump connected to the fire system, with a pressure regulator attached.

BLOW-OFF VALVES

The scale which exists in every boiler is frequently a source of waste and annoyance when a piece gets between the disc plug or gate and the seat. It is often hard to make an obstruction of this kind move when only one valve is used. For this reason it is advisable to use a Y blow-off valve or a blow-off cock in the line between the boiler and the regular globe or angle blow-off valve. In blowing-off the first valve is opened fully and the operation of blowing-off controlled by the second. When the blowing-off is finished the second valve is closed first and then the other or inside valve. By this method all friction thru the first valve is reduced as much as possible and naturally the wear on the plug, disc, gate and seat will amount to a minimum.

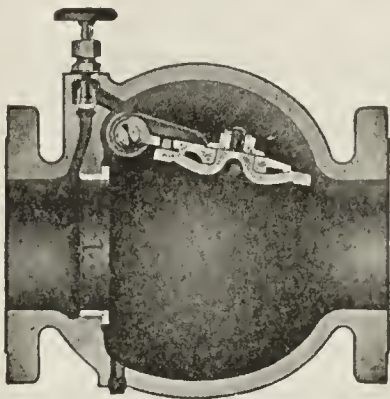
The use of fuel oil, of internal combustion engines, and of pressure lubricating systems, has increased the use of needle valves to a large extent during the past few years. In this class of valve the main requisites are the ability to control the feed within narrow limits and to close off the feed entirely and absolutely when desired. These valves are usually made entirely of brass.

AMOUNT OF VALVES IN USE

The number of valves used around a plant is surprisingly large when a thoro inventory is made. The list shown in this article is used by the American Refractories Co., at Joliet, Ill., in the plant proper, exclusive of the heating valves in the office or those in the garage.

A manufacturer's publication contained the following statement recently:

"A half inch diameter valve stem leaking all around the stuffing box will blow about forty pounds of steam per hour with 100 pounds pressure in the valve. Ten stuffing boxes leaking for one full day will waste 1,600 pounds of coal."



Emergency Engine Stop Valve. Can be Installed in Any Position.

Without entering into the question of the accuracy of this statement, it can be figured out that a space one sixty-fourth of an inch all around the valve stem will allow this amount of steam to escape.

When we consider the number of valves in use, and the enormous amount of waste that is possible thru leaks, we cannot urge too strongly, that manufacturers use utmost caution in preventing and avoiding leaks. A leaky valve stem or pipe joint is usually repaired as soon as possible, but frequently the valves leak on the inside, and this leak goes on for a long time unnoticed. Inspection of all the valves around a plant should therefore be made periodically to discover leaks and have them repaired in order to prevent greater ones. A new valve or a new seat will be a small expense compared to the savings that will be effected. The drying system of a plant is always very important and any loss of steam in that line curtails production. In this and in other ways leaky valves and pipe joints can cause a large loss in production, and increased costs.

List of different sized valves on American Refractories Co.'s plant at Joliet:

Size of Valves	Number	Size of Valves	Number
1/4 inch	23	2 1/2 inch	6
3/8 inch	27	3 inch	27
1/2 inch	41	3 1/2 inch	6
3/4 inch	61	4 inch	1
1 inch	67	4 1/2 inch	9
1 1/4 inch	14	6 inch	1
1 1/2 inch	24	8 inch	6
2 inch	43	14 inch	1

Total all valves in plant.....357

* * *

Hollow Tile Exhibit at Pageant of Progress

Thru an oversight the exhibit of the Hollow Building Tile Association at Chicago's Pageant of Progress was not mentioned in the last issue of *Brick and Clay Record*. The display consisted of a section thru a miniature house the floors and walls of which were built of hollow tile. The booth attracted considerable attention.

Reduced Refractory Prices Stimulate Demand

The August 11 issue of the "Iron Trade Review" contained a message from Pittsburgh regarding the increased demand that has resulted from the lower prices put into effect by the manufacturers of refractory brick, on August 1. "The price reductions were brought about," the article says "in the desire of the manufacturers to aid in the liquidation process going on in the iron and steel industry." That they have succeeded in stimulating business is shown by the fact that inquiries and orders immediately increased. One manufacturer reported sales of several lots of from 50,000 to 250,000 brick each. The percentage of inquiries that are followed by orders has increased every month and now stands at about thirty-five per cent.

The reductions in price amounted to about \$2 or \$3 per thousand and at present the prices are from \$33 to \$35 for silica brick and \$34 to \$43 for No. 1 fire clay brick. Chrome and magnesite brick are priced at \$55 and \$70 per net ton.

* * *

Elect F. W. Lucke President of Association

F. W. Lucke, of F. W. Lucke & Co., Chicago, Ill., was recently accorded the distinction of being elected president of the Indiana Paving Brick Manufacturers' Association. Mr. Lucke is ably qualified to handle this position, having been selling paving brick for the last twenty years. His company is the exclusive selling agent in Chicago for the Streator



F. W. LUCKE

(Ill.) Clay Manufacturing Co., Metropolitan Paving Brick Co., Canton, Ohio, Veedersburg (Ind.) Paver Co. and the Nelsonville (Ohio) Brick Co. F. W. Lucke & Co. also handles the entire output of the Danville (Ill.) Brick Co.

Mr. Lucke has been very active in the promotion of paving brick in Indiana and Illinois. The Indiana Paving Brick Manufacturers' Association is going to give more time to the promotion of paving brick in Indiana than ever before and to this end has engaged Robert H. McKinley as chief engineer.

Mr. McKinley has been doing some very good work. He is a graduate of Purdue University.

Manufacturers are hopeful of securing a reduction in freight rates and look for a good amount of business during the fall and winter. Mr. Lucke says: "I believe that with a reduction in freight rates and a reduction in the cost of manufacturing, we can go before the property owner, and that we will not have any trouble in getting work out this fall, for the people want paving. I believe that the banks are about ready to resume the purchase of municipal paper."

* * *

Selling Brick Under Present Conditions

Warren Griffis, general manager of the Baltimore (Md.) Brick Co., was recently talking to a representative of *Brick and Clay Record* on the problems of selling common brick under present conditions. "The biggest factor in the problem at this time is a reduction in price, if that reduction has not already been made," said he. "That price should be reduced to the lowest possible point consistent with safety and sane business administration. It is useless to make any endeavor beyond this point. The cost of common brick in a dwelling house is so ridiculously small, in comparison with the magnitude of the functions it performs, that any further reduction in price is of no moment. A further reduction would simply serve to put the manufacturer in the position of losing money to no purpose.

"Thruout the country as a whole, there has been an endeavor apparent to meet the situation along the lines I have indicated. I estimate that the reductions will run from twenty to forty per cent. from the peak of prices. As a rule, the brick manufacturers have done their whole part in the effort to induce a resumption of construction activities.

"To sell for less than cost would be suicidal and would serve no purpose. I believe that one of the biggest things that can be done is the promulgation of the idea of constructing what is known as an ideal wall,—a hollow wall built with solid brick. It cuts down the cost of the brick work about forty per cent. By actual tests, more bricks can be laid per day than by the usual plan, and there is a saving on material.

"I consider this the very best selling point, and it should be used by the brick salesman. If this kind of a wall is used, a brick house can be erected cheaper than a frame house, and it will be more nearly fire-proof.

"There is no panacea for the present situation. There are certain factors in the case that are known to all of us. The brick salesman can help. One of the principal reasons why construction is not going ahead is the attitude of labor. One of the tasks of the brick salesman should be to help induce mechanics connected with construction to accept a reasonable wage. The price of labor is, I believe, the chief deterrent to the resumption of construction.

"But how can the brick salesman help? By securing conferences between the various factions interested and endeavoring to get them to pull together.

"It seems to me that prices have dropped all they can with the present lack of building. Prices can drop lower only if there is a general resumption of building, which will permit the brick factories to run to capacity, in which case the quantity production of brick will reduce the cost to the brick manufacturer, and he can in turn sell brick cheaper.

"So far as inducing people to build with brick instead of wood, the problem of the brick salesman is exactly the same. He has the same talk to make and the same points to emphasize, because they comprise the truth of the situation."

REMOVING KEYED PULLEYS *from a* SHAFT

*Keys Often Give Trouble When Removing
Pulley—Uses of Different Shaped Keys*

By G. H. Radebaugh

*Asst. Manager Shop Laboratories Dept., of Mechanical Engineering,
University of Illinois*

OCCASIONALLY it is very difficult to remove a pulley from a shaft without cracking the hub of the pulley.

One will find several designs of keys and key fastenings used on clayworking machinery; the type of design decides which mechanical operation will be used to remove the pulley from the shaft.

The most frequent troubles in pulleys sticking on a key or shaft is the twisting or rotation of the pulley on the key and the tearing of the shaft with the set screws. This causes a burr or uneven place on the shaft which makes the pulley or collar very difficult to remove. In fact, if the pulley is a solid one, the only way it can be removed is to actually drive the pulley from the shaft with a heavy hammer or pull it with draw clamps. This shears off the irregular shaft abrasion.

RUST CAUSES PULLEY TO STICK

Highly raised burrs or irregular places, now and then, will not shear or work down as just described when the pulley is being driven over them. This means that the hole of the pulley will be somewhat torn up during the operation. If this does occur, it must be understood that this hole can be cleaned up with a half round file. Rusting of shaft, pulley and key many times causes them to stick, which increases the difficulties in removing the pulley. This can be overcome, however, and with a little extra effort the pulley can be removed. Before taking up the actual operation of removing the pulley as shown in the operation view, it will be of interest and also very profitable to review some of the standard methods of fastenings used by the manufacturers of clay machinery.

FLAT KEY OFTEN USED

The saddle key as shown in Drawing A is used only when the holding power is small and where it is not desirable to cut or mar the shaft. This key is hollowed out to fit the shaft and holds by friction alone. Keys in this design never give any trouble when removing pulley from shaft. They are

used on some of our very smallest power driven machinery.

The flat key (Drawing B) rests upon a flat which is formed on the shaft to receive the key and therefore has a greater holding power than the key just described. When repairing most of the smaller power equipment on the plant, this type of key can be used, because it is not necessary to cut a key-way. A flat is filed on the shaft, as shown in the figure.

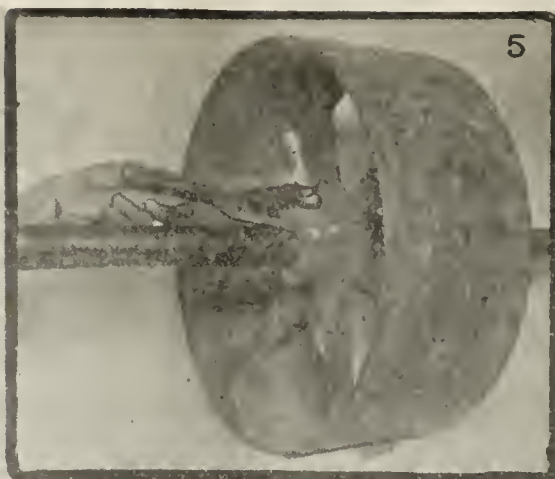
The sunk key (Drawing C) is the most common form used where the forces to be resisted are large. A slot called a key-way is cut lengthwise in the shaft, and another to correspond is cut in the piece to be secured. The key is then fitted to the opening formed by the key-ways. The cutting of key ways is a machine shop job; sometimes however, this job can be done by using the cape chisel and flat chisel. This is a very difficult and trying operation, so it is not recommended. This type of key can be tapered or straight. The taper key is sometimes provided with a head, as shown in the figure, to facilitate its removal when the point cannot be conveniently reached for the purpose of driving it out. This headed key is known to the trade as a gib headed key. The amount of taper to these keys is usually about $\frac{1}{8}$ -inch per foot of length.

SQUARE KEY USED ON LARGER MACHINERY

The square key is shown in Drawing D. This key should fit accurately on the side to prevent the key from rolling over in the key seat. It should be fitted to bear lightly on the top and bottom. These keys are made from square soft steel stock, and it is not necessary to do much filing or fitting if the key-ways have been cut properly in the pulley and on the shaft. This key will be found on some of the larger power machinery in the clay plant.

The Woodruff key, as shown in Drawing E, is a new type of key and is mostly used on tractor engines and auxiliary equipment on the tractor and will also be found on automobile construction. This key is a half disc which is placed in a

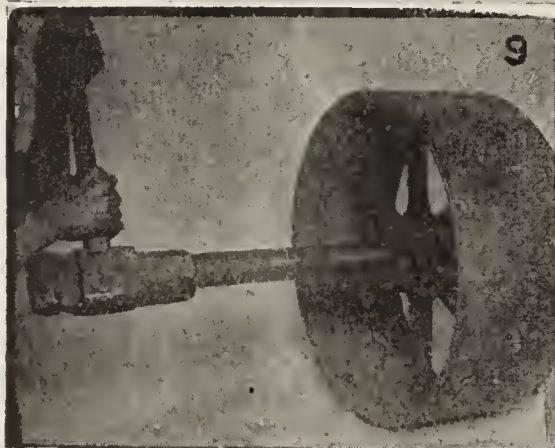
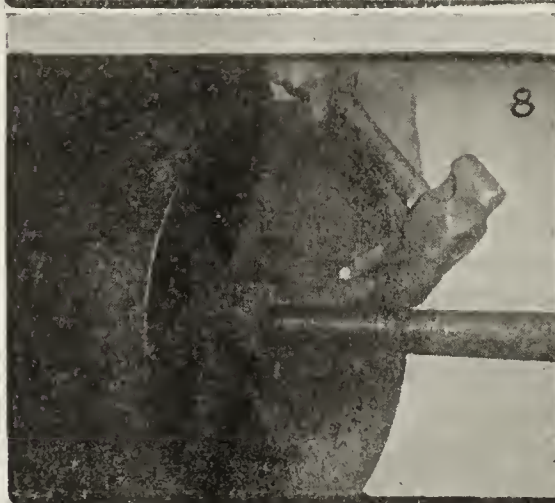




semi-circular key seat sunk in the shaft by a special milling cutter. As the key fits the seat, it will adjust itself easily to any variation in the angle of the key way of the wheel or pulley, as shown in Drawing F. A good practice to follow in judging sizes of keys is to make the width of the key about one-fourth the diameter of the shaft. The depth of the slot cut in the shaft to be one-half the thickness of the key and the depth cut of key seat in pulleys a little less than one-half the thickness. This will permit the fitting of a square stock key to the key slot.

CLEAN SHAFT BEFORE REMOVING PULLEY

Removing set screws. Before removing a pulley from a shaft, examine the shaft surface on which the pulley must slide in removing it, and notice if it is rusty or scarred up. Care must be exercised in driving the pulley on to a surface that is not clean and bright. As the hole usually fits the shaft very closely, it is therefore good practice to draw, file or scrape a dirty shaft before you endeavor to remove the pulley. After the shaft is cleaned, remove the set screw, as shown in Fig. 1. There are several types of set screws. They are designated by the type of point; the dog pointed set screw is used to good advantage on pulley work. The shaft is drilled to receive the dog point. This means increased holding power over some of the other types of set screws, because it would necessitate the pulling out of this point from the hole.



SET SCREWS HARDER THAN SHAFT

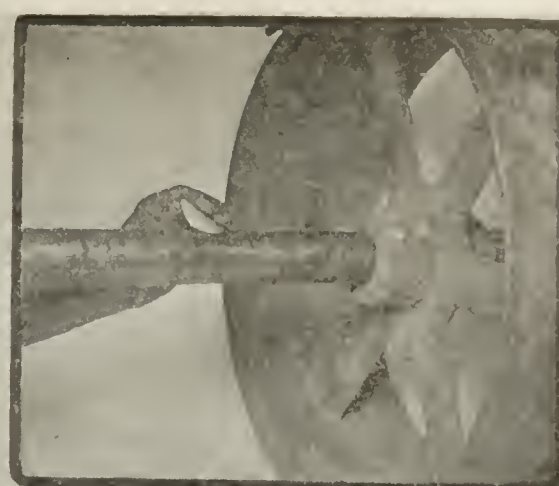
The cup pointed set screw is the most common. It is shown in use on this pulley. Two screws are used on this job and are placed on a quarter with the key. It is common practice to have the set screw tighten down on the key. Practices vary in the location of set screws on a pulley. The holding power of a cup pointed screw depends on how tight it is forced into the shaft. Set screws are always hard and have a tendency to cut the soft shaft. This is one of the reasons why a pulley is hard to remove from a shaft after it has twisted or rotated. This causes the hardened set screw to tear the surface.

Drawing the gib head key. There are several methods of drawing a gib head key from a pulley. The most common is to take the ordinary buggy bar or rocking bar and remove the key, as shown in Fig. 2. This operation is made an easy one by using the set screws for a pry block. Notice the piece of paper between the head of the set screw and the bar. This is done to prevent slippage. In pulling a key in this manner, bump the bar with the palm of the hand; quick, sharp jars are what is needed to loosen the key. If the key loosens, your job is an easy one, but if the key does not release, other operations are necessary.

KEY DRIFT CAN BE MADE IN FORGE

Driving out the key with key drift. Occasionally in the tool kit around the clay plant you will find the key drift





as shown in Fig. 3. This type of tool can be made in the forge shop. It should be tempered the same as the cold chisel. As the key did not release with the operation just described, the next procedure is to use the key drift. Notice in the operation how the drift is placed in the key way slot. Remember if the key is a tapered one, it must be driven out from the small end. The key drift is the only tool that can be employed when a square key has been used. It would be impossible to draw this key, as you would the gib ahead. With the driving action direct on the key and it still does not release, the problem becomes now a more serious one, and demands a series of cut and try methods.

Placing coal oil on the rusted surface. Use an oil can filled with kerosene, placing the spout in the set screw hole, as shown in Fig. 4, using an abundance of the oil. This should loosen up the rusted surfaces, if the oil spreads between the shaft and pulley.

LOOSEN PULLEY WITH PEEN HAMMER

To cause the oil to penetrate into the rust seams peen around the pulley hub with a light ball peen hammer, as shown in Fig. 5. This peening or jarring action has a tendency to loosen the pulley on the shaft, which permits the free running of the oil. Some mechanics perform this peening operation when the key is being drawn with a bar or driven out with the key drift, as previously explained. Another scheme that is used to good advantage is the heating of the pulley hub, as shown in Fig. 6, with the blow torch. This method has its objectional features, but no doubt in some cases it will turn the trick. This operation can best be performed in the work shop where the heat can be applied quickly. The heat should be first applied to the hub just over the keyway. As the heat is being applied, peen the hub, as shown in Fig. 5. The key is then drawn and removed.

We have now been successful in removing the key. Our next operation is to remove the pulley from the shaft. Many times this is done with ease, but often times the pulley is frozen to the shaft, so we have another problem to remove

it. If the pulley is not free on the shaft, a plan that is very common, that is if the job will permit the operator to do it, is to pick up the pulley and shaft, as shown in Fig. 7. The end of the shaft is permitted to drop on a block of wood. The sudden jar on the pulley many times causes it to loosen up. A much heavier shock can be applied to the pulley in this manner than with the ordinary hammer.

DRIVING PULLEY FROM SHAFT

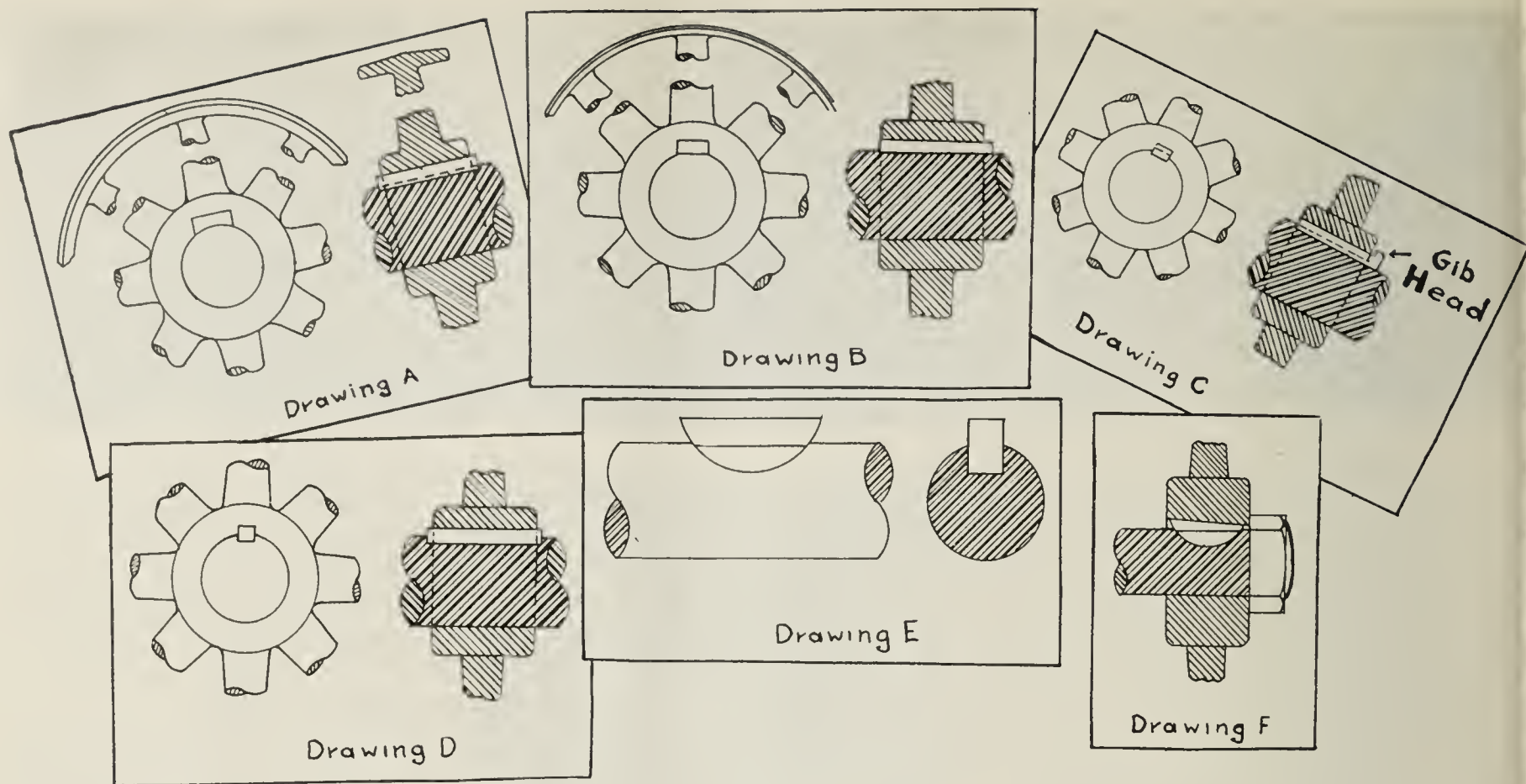
If this does not release the pulley, try by heating, as shown when the key was drawn, and repeat the operation. Many jobs will not permit this operation. The shaft may be too long, or it may have other equipment fastened to it. In this case the pulley may be driven from the shaft, using a sledge hammer and a piece of scrap steel, as shown in Fig. 8.

Inspect for the strongest looking place on the hub, and apply the steel bar to this location. In delivering blows with the sledge, judgment must be used to determine the weight of the blow, as there is some danger of cracking the hub. In this operation it is best to support the shaft on boxes or saw horses, so that the pulley will not be resting on the floor. Two men are required to perform this operation. One man will hold the steel bar and the shaft and the other man will deliver the blows with the sledge. This operation can be performed in a reverse fashion. The pulley hub can be backed up by a heavy iron or rail, and the blows from the sledge can be delivered to the end of the shaft, as shown in Figs. 9 and 10.

DO NOT DRIVE DIRECTLY ON THE SHAFT

Notice the difference in these two views. It is surprising how many times you will find the layman driving on the end of an unprotected shaft. The reason why one should always use a lead hammer block, piece of brass, or a wooden block on the end of a shaft to receive the blow is because considerable time is saved. In driving directly on the shaft, it is burred over and upset so that it will not pass thru the hole in the pulley. In case the end is enlarged, this can be filed down to size, which requires considerable time. If the pulley is





located near the end of the shaft, it can be removed by using the draw clamp. These draw clamps can be made up out of scrap steel, two bolts, a few large nuts, and two ordinary blocks of wood.

EFFICIENT ARRANGEMENT FOR REMOVING PULLEY FROM SHAFT

As shown in Fig. 11, two small straps of steel are supported on the hub and two blocks of wood. Washers are used to even up the block support. The bolts, as shown, are placed in the straps and must be large enough to reach to the end of the shaft and receive a larger steel strap, as shown in Fig. 12. The operator tightens up on the nuts which are pulling directly in the two small straps in the rear of the pulley. An even pull must be applied on each bolt, using a large wrench. If the pulley does not release,peen the pulley hub. With this treatment the pulley loosens, but not free enough so it can be removed easily. It will be necessary to draw the pulley from the shaft with the draw clamps. To do this without the aid of specially threaded bolts, it is necessary to use washers, large nuts, and so forth as shown in Fig. 13.

REFITTING A WOODRUFF KEY

The pulley being removed from the tight place on the shaft uncovers the reason for our difficulties. Notice the rough place on the shaft, as shown in Fig. 14. This is the effect of a cup pointed set screw and a loose fitted key. Before replacing the pulley, the shaft should be drawn filed and well rubbed down with emery cloth. In refitting a Woodruff key, place the key in the milled slot and drive into place. The Woodruff key, as previously described, is used on gas engine construction. In Fig. 15 two of these keys are shown located to hold a pulley. Generally these keys are used on short bearings. When fitting this key, as well as the square key, the height is obtained by draw filing, as shown in Fig. 16. To check this operation and to insure that no more of the key will be removed than necessary, lamp black is used, as shown in Fig. 17. A key to fit properly must not have too much clearance in the top. In using the lamp black, proof marks or spots show up on the top of the key, which indicates when it is fitted into the key slot the high spots on the key. These high spots are then filed off and the key is driven in place.

Paving Brick Men Fighting Cheaper Roads

The agitation headed by Senator Brand for caution in the award of highway improvement contracts because of alleged high costs of construction is having its effect on the paving brick manufacturing industries of the Buckeye State. The agitation has resolved itself in a movement for cheaper types of roads and it is believed that the paving brick industry will be injured as a result.

The Ohio Paving Brick Manufacturers' Association is taking active steps to counteract this agitation by showing the first cost and the cost of maintenance of brick roads as compared with cheaper types. In a hearing before the Ohio Utilities Commission recently on the question of reduction on freight rates on road building materials charges were made that the Ohio Paving Brick Manufacturers' Association maintained a promotion fund. But J. L. Murphy, of the Hocking Valley Brick Co., president of the association, offered to throw open the books of the association to any set of investigators and this has stopped the agitation. The railroads, which charged such a promotion fund, were countered by being reminded that a like fund was maintained by large railroad corporations and that the investigation if started would have to proceed into that fund. Thus the railroads called off the agitation.

* * *

Ceramics Work Being Expanded

Fully \$60,000 will be expended during the next twelve months at the ceramic experiment station of the United States Bureau of Mines at Columbus, Ohio, says "Chemical and Metallurgical Engineering." This sum includes with the federal appropriations the amounts which have been contributed by industries interested in the research. In addition to the regular work of the station, the experimentation on heavy clay products and on the Georgia kaolins will be conducted at the Columbus station.

Due to the increased importance of the work at Columbus L. I. Shaw, the assistant chief chemist of the bureau, has been transferred to Columbus as chief assistant to the superintendent of the station. The vacancy in the Washington office has been filled by the designation of Dr. Andrew Stewart to act as assistant chief chemist.

The BUILDING SITUATION

in the EAST

CONSTRUCTION ACTIVITY is increasing in the eastern districts. The past fortnight has brought out many bright spots in the industry and recovery to a more near-normal state of affairs gradually is coming about.

The first week in August in the New England section carries a record of contract awards to an amount of \$5,843,800, the highest total of any corresponding week in any previous year, excepting 1919, when the figure stood at \$7,351,000. Operations continue to be concentrated upon housing work, with larger residence construction growing more noticeable. A number of textile mills have broken ground for extensions, while shoe factories, as well, are expanding for increased fall manufacture. Other industrial work is slow.

The Boston material market is growing more active, with prices exhibiting a strong tendency of remaining at present levels, with the possible exception of common brick which has declined a dollar since the last issue of *Brick and Clay Record*, or to a point of \$17 a thousand delivered for ordinary sand-struck varieties. Hudson River material holds at \$20 on the job, while Connecticut production is being turned at \$22.

FIRE BRICK \$60

No. 1 fire brick is selling for \$60 a thousand, delivered, while higher grade material is quoted at \$70. Fire clay remains at \$25 a ton. Ordinary face brick has declined to \$30 and \$32, covering what may be termed "selected water-struck" selections. Regular rough texture brick is around the \$50 mark, with no immediate change in sight.

Boston dealers are now holding standard sewer pipe at forty per cent. off list, and double strength material at twenty-five per cent. off. Flue lining is forty per cent. off list, and wall coping, thirty-five per cent. Terra cotta partition blocks, 4x12 inches, are being turned for \$150 a thousand, while eight-inch stock is held at \$280.

PROVIDENCE ACTIVITIES

Large construction operations at Providence, R. I., are helping to bring sizable totals to current work, estimated at close to \$25,000,000, including the new municipal sewerage system. An eighteen-story office building is nearing completion, and erection has been commenced on the new Providence-Biltmore Hotel, estimated to cost about \$5,000,000. Large quantities of brick, hollow tile and other burned clay products are being absorbed for activities of this character.

Building materials continue to hold at substantial levels at Providence, as compared with practically all other eastern sections. Common brick is selling at from \$25 to \$28 a thousand, with some dealers asking \$30 for best grade stock. Fire brick varies from \$80 to \$100 a thousand, delivered, according to selection, and fire clay is being retailed at \$1.50 a bag. Drain tile is quoted at from twelve to sixteen cents a foot, according to size, and wall coping at thirty-two, forty-eight and ninety-six cents, respectively for nine-inch, twelve-inch and eighteen-inch material.

INCREASED BUILDING AT NEW YORK

During the month of July, the Manhattan Bureau of Buildings recorded plans for fifty-three new buildings, representing an investment of \$17,878,825 as compared with 141 buildings costing an estimated amount of \$6,269,800 in the same month of last year; this is a gain of \$11,609,025 in the amount in-

volved, altho the number of operations was smaller. An encouraging feature of the building situation at New York has been brought about by the fact that loans for new buildings are now comparatively easy to secure. The insurance companies and banks are lending much more freely as stability in realty values is being reached. The Metropolitan Life Insurance Co. reports that since the commencement of the year it has placed mortgage loans aggregating more than \$50,000,000 on property of various kinds.

Common brick is quoted at \$15 per thousand, wholesale, along side dock, while local dealers are asking close to \$18 on the job. Cargoes coming from the Hudson River yards are now aggregating from thirty to thirty-five a week, and shipments are being absorbed rapidly.

There are no quotations at New York at the present time on Raritan River brick. Gray and buff continue to be the popular shades of face brick, with quotations holding at from \$42 to \$55, according to selection; rough varieties lead in demand. Colonials are holding at \$45 a thousand, delivered.

Partition tile, 2x12x12-inch split furring, brings \$180 per thousand on the job, while 6x12x12-inch material is priced at \$280. Sewer pipe is now around twenty per cent. off list. Fire brick ranges from \$70 to \$80 a thousand for regular material, with as high as \$90 asked for prime selections.

PROGRESS MADE IN NEW JERSEY

During the month of July at Newark, plans were filed for the construction of homes to provide for 183 families, with total cost estimated at \$856,516. The same month of last year produced permits for the erection of similar structures to house but forty-eight families, with an aggregate cost of \$190,000. Other work is also progressing in a substantial way in this section, the month noted, July, rounding out a total of \$1,854,021 for the period.

Bricklayers and masons at Newark will continue to work at a wage scale of \$10 a day, in accordance with a decision of an arbitrator selected to settle differences between the men and employers. The latter sought a reduction of \$1 a day in the wage rate. The new agreement terminating January 1, is contingent, however, upon the situation in New York, where a reduction is now being urged by local contractors and builders.

MATERIAL PRICES HOLD

Common brick at Newark is holding at \$21 a thousand, delivered, the same figure being asked both for Hudson River and Hackensack production. There is a growing demand for the material, as well as for other burned clay products. Face brick is being held at \$45 and \$50, with choice selections a little higher. Fire brick has declined to slightly below \$70 a thousand, altho first grade material is still being sold by some dealers at \$75. Hollow building tile is priced at \$118 upwards, according to size.

Trenton and Hackensack brick manufacturing plants continue under a fair degree of activity, and producers now seem more inclined to stock the material for anticipated fall and winter construction. The price at the kiln is being well maintained at from \$17 to \$19 a thousand, and Hackensack yards are quite active in furnishing stock direct by motor truck. From current indications, it is likely that the seasonal plant will continue production to the end of the season, a fact which did not

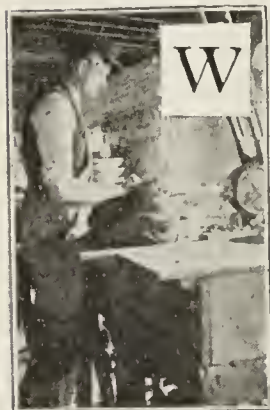
(Continued on page 301.)

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

POTTERS RECEIVE WORKERS' DEMANDS



WHEN the Labor Committee of the United States Potters' Association and the Conference Committee of the United States Potters' Association went into joint session in the Ambassador Hotel, Atlantic City, N. J., to discuss a new wage scale for the current fiscal year, the workers accepted a reduction of wages of ten per cent., effective as of August 1, and another seven per cent., effective as of November 1 next.

The Brotherhood made the following demands upon the manufacturers:

1. That moldmakers be relieved of delivering and dumping plaster and that the firm deliver and dump plaster in box between the hours of 4:30 p. m. and 6:30 a. m.

2. That, when slip is in bad condition, casters shall not be required to stand for the loss of ware when the foreman's attention has been called to the condition of the slip and the caster is allowed to use same

SHOULD ESTABLISH PRICE FOR JIGGERING

3. That a net price for jiggering be established; the firm to pay all help and pay for dead work such as carrying out, carrying clay and scraps and changing of all molds.

4. That all finishers, male and female, regardless of their relationship, shall be hired and paid by the firm and the uniform wage scale now being paid to finishers shall prevail.

5. That the firm pay the handlemaker's helper the same bonus as paid to the jiggerman's helper when the handlemaker is required to press handles.

6. That the firm pay the turner's sponger a bonus of one dollar per day.

7. That dishmakers be furnished clay free of charge when working without a helper.

8. That dishmakers be paid the prevailing wage for moving old and new molds, including flagstones.

9. That the general ware saggermaking list be revised.

TIME AND ONE-HALF FOR OVERTIME

10. That 400 cubic feet shall constitute a day's work on bisque and 324 cubic feet shall constitute a day's work on glostware at the prevailing rate of wages paid for two kilnmen's days. Where kilnmen are required to do more

than one day's placing in any one day they shall receive time and one-half for such work.

11. That in the future when kilns are filled the kilnmen shall not be required to move or straighten up saggers around the kilns.

12. That in all potteries working under china conditions the number of cubic feet for a kilnman's day's work shall be reduced from 200 to 130 on bisque, and from 162 to 112 on glost.

13. That all thin cups shall be boxed for kilnmen at the expense of the firm.

GIVE APPRENTICE CHANCE TO LEARN TRADE

14. That the firm shall pay fifty cents per day extra and plussages, to the boss dipper for running shop, and no boss dipper to have charge of more than one crew.

15. That a minimum rate of wages be fixed for first-year apprentice warehousemen. That apprentices be moved up and be given the privilege to fully learn the trade, and that apprentices shall not be kept longer than six months on any kind of work until they have learned the trade.

16. That eight hours shall constitute a day's work for warehousemen.

17. That an apprentice and day wage scale be adopted for liners, gilders, printers, decal and burnishers. All apprentices must serve three years before becoming journeymen. Eight hours shall constitute a day's work for day and piece workers.

UNIFORM SCALE FOR DECORATORS

18. That all shortage and matching be done by the apprentices and that only one apprentice be allowed to eight journeymen or fraction thereof.

19. That liners and gilders shall be paid one cent per dozen extra where they are required to do stiling or spurring.

20. That committees be appointed to establish a uniform scale for decorators based on good workmanship.

21. That an apprentice ratio for decorating kilnmen shall be adopted, as follows: First six months, thirty-three and one-third per cent. off; second six months, twenty per cent. off; first six months of second year, ten per cent. off, thereafter, journeymen. The difference between the apprentice and the journeyman's wage shall be divided in equal parts among the crew, the fireman to participate in this division of the apprentice's wages only in case where the fireman does an equal day's work with the crew; otherwise the fireman shall be excluded from any part of the apprentice money.

ONE FIREMAN TO EVERY KILN SHED

22. That no decorating kiln fireman shall be permitted nor allowed to have charge of more than one distinct kiln shed, nor more than one battery of kilns where the firm has more than one set of kilns or more than one kiln shed, that each job shall have one fireman to each crew.

23. That all piece-work packing be abolished and eight hours shall constitute a day's work.

24. That no apprentices be started in any trade if there are journeymen out of employment.

25. That all potteries suspend work at noon on Saturday, and pay not later than noon on pay Saturday. That all work done on Saturday afternoon be paid for at time and a quarter.

26. That a standing committee be appointed for the china trade west of the Allegheny Mountains, the committee to meet in East Liverpool, Ohio.

27. That arrangements be made for a conference of china workers and china manufacturers immediately following each semi-porcelain conference.

* * *

Tariff Bill Will Protect Chemical Porcelain

Passage of the Fordney tariff bill, now on its way thru Congress will mean a new lease on life for the Coors Porcelain Co. of Golden, Cal. The company has been manufacturing chemical porcelain since the beginning of the war when importations of this commodity were stopped. It is said that this concern is the only pottery in the world now devoted exclusively to the manufacture of chemical porcelain. The tariff bill provides for a duty of thirty-five per cent. ad valorem for "china, porcelain and other vitrified wares, including chemical porcelain."

* * *

Well Known Potters Optimistic Over Outlook

"I am an optimist and absolutely refuse to be otherwise," Homer J. Taylor, president of the Knowles, Taylor & Knowles Co., declared before he left for Atlantic City to take part in the biennial wage conference. He continued:

"Naturally we are hoping that our whole country will get back to normal again as there is a feeling with us, not what is happening in our own business at present, but what might happen—a sort of uncertainty, and I feel as if I must 'knock wood' as I write when I say we are well satisfied with our output at present. I must explain, tho, that at this moment we are running on back orders more than the ones we have been receiving for the two or three months just past. June and July have always been dull months, but at this writing orders have been increasing both by mail and from buyers who are visiting our office.

"I may be wrong in my opinion, I hope I am not, but I refuse to be a pessimist. Yes, I know there are several millions idle and factories shut down, but we are just sleeping off that hilarious jag of prosperity which ended a few months ago, and it will soon be over and we'll feel better for it—the rest not the jag—and like other occasions of which I have used the simile, we thought we were pretty clever. We can't bust up things and destroy and overindulge without the reaction. If you blow the balloon too full it will surely burst.

"Say, all you pessimists, be good sports, getting back to that good fellowship night-before stuff, let's take what naturally should be coming to us now. Let's smile and help make a new condition and forget that—"Why, I remember two years ago the price of so-and-so was so much and look at it now." Forget it, I say, meet the present changed condition as you met the changed condition when it was on the upward trend. Adjust your selling price on the new basis, make a profit and go after it for all it's worth and for heaven's sake don't acknowledge things have been coming so easy in the past three or four years that we have forgotten how.

"We're the best country on earth, got the most money, the most pep and we know how to fight both on foreign soil and in Jersey City. LET'S GO!

"I am an optimist and absolutely refuse to be otherwise."

Edwin M. Knowles, president of the Edwin M. Knowles China Co., Newell, W. Va., has expressed his opinion on the situation of the pottery trade in the following language:

"Our view of the business situation is not all obstructed by clouds; we can see the sun of prosperity breaking thru in many different directions. We learn of many cases of labor disputes being satisfactorily adjusted; excellent reports on the crop situation, improvement and progress on transportation conditions, with good prospects of the big nations of the world getting together on common ground on world disarmament. With these and other improvements in sight we believe that the business of our country is shifting from low gear to intermediate, and not far away in the future we can shift into high gear. We have faith that the leaders or big men of our country can and will do much to bring about the much desired conditions, namely, Peace, Prosperity, and Happiness."

* * *

Prospects Best Since Start of 1921

Unless the signs fail, it is reasonable to believe that generalware potteries in the eastern Ohio district will show improved working schedules early in September. It will require some few days for manufacturers to revise selling lists and get these in the hands of the buyers, altho a few manufacturers have already sent out notices of changes in lists. The sending out of revised selling lists, however, will not mean that new business will be immediately forwarded pottery manufacturers. The distributors, both jobbers and retail trade will very likely make an inventory of their stocks, and order accordingly. It will take time to do this after revised selling lists have been received, so that any increase in demand will not be noticeable in any great extent until fall buying starts.

Stocks in the hands of the retail and jobbing trade are by no means excessive. For many months buying has been on the "hand-to-mouth" order, more or less, and it is because of this situation that the generalware potteries have not experienced any active demand for merchandise.

While there have been very few buyers in the East Liverpool market during the last two months, those who did visit the potteries indicated in no uncertain terms that a revision in selling lists would have quite a stimulating effect upon orders. The manufacturers realized this situation, and of course any reductions obtained both in wage and material costs will be immediately passed on to the consumers. Stocks in pottery warehouses are not excessive, but it has been intimated in a number of offices that these stocks are uneven. There is a surplus in this or that item and a scarcity of something else. It will, of course, take time to create that even accumulation which is necessary for the prompt shipment of new specifications.

In a general way, the demand for American pottery this year has been better in the vitreous china end than in the semi-porcelain plants. While the receipts of imported dinnerware have been soaring, yet the American product is lower in price, so buyers say, than that from England. This being so, then it would naturally follow that with new declines in the American selling list, the demand for American dinnerware would show a decided increase.

During the lull in the demand at potteries in the East Liverpool district the last few months, manufacturers have made numerous improvements with the thought in mind that when normal schedules are resumed, the physical condition of their properties would be of the best. It is pleasing to note, however, that manufacturers want to operate their properties as actively as possible, just as the employes have the desire to put in full time.

Buyers cannot put off too long placing specifications for fall and holiday merchandise, for if they do, the manufacturers will be so rushed toward the tag end of the season that it will be a physical impossibility to make shipments. Such an experience, however, is not new to the American pottery manufacturer, and therefore the trade will be urged this year to anticipate their fall and holiday requirements as early as possible in order to insure prompt deliveries. Viewing the domestic pottery business today from every angle, the situation is far brighter than it has been at any time during the last four months.

* * *

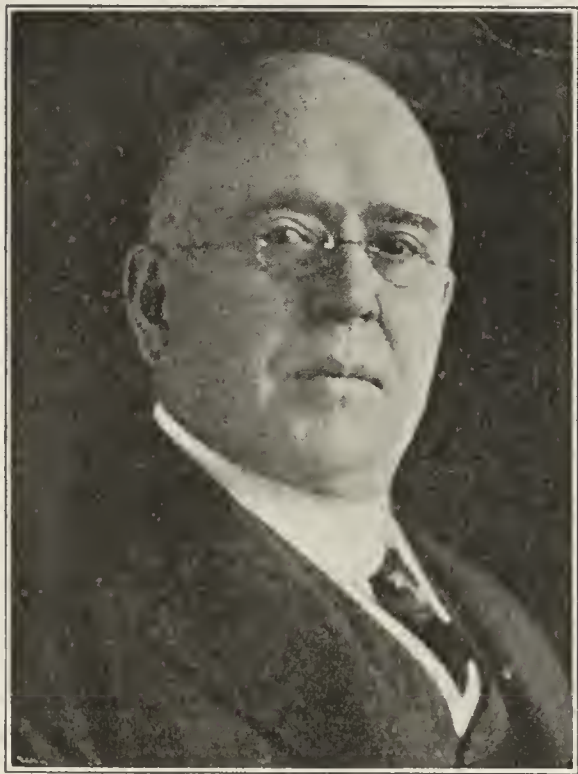
Potter Speaks Before Rotarians

Charles S. Maddock, Jr., of the Thomas Maddock's Sons Co., Trenton, N. J., gave an interesting talk before the members of the Rotary Club at Trenton, August 4, covering his recent trip to Scotland for the meeting of the International Rotary.

* * *

Death Takes George W. Thomas

George W. Thomas, president of the R. Thomas & Sons Co., pioneers in the manufacturing of electric porcelain in Ohio and the first firm in the United States to manufacture high voltage porcelain, died at his home in East Liverpool, Ohio, at the age of sixty-nine years.



GEORGE W. THOMAS

Born in East Liverpool in 1852, as a boy he learned the door knob manufacturing business, an industry in which the firm that he and his father later organized became interested at the Riverside Knob works. In 1869, he became associated with his father who effected a co-partnership with Elijah Webster, in the manufacture of door knobs at Beaver Falls, Pa.

In 1873, the elder Thomas disposed of his door knob business in the Beaver Falls factory and returned to East Liverpool, where with his son, George W., he organized the R. Thomas & Sons firm, which engaged in the door knob manufacturing business in a one kiln plant. In later years the firm name was changed to the R. Thomas & Sons Co.

Under the management of the father and son the firm prospered. Additions were erected to the factory and the capacity increased from time to time until now the company has a twelve-kiln plant there and a ten-kiln factory in Lisbon, Ohio. The Lisbon factory was originally erected for the manufacture of table ware, but in 1895 it was made a branch of the East Liverpool factory and was devoted exclusively to the electric porcelain business.

Mr. Thomas was a director in the Ohio Silica Co., East Liverpool, and the National Silica Co., Oregon, Ill. Two daughters and two sons survive.

* * *

Pottery Outlook Very Much Brighter

A clearly defined spirit of optimism has brightened the industrial outlook in the East Liverpool, Ohio, district. Pottery manufacturers there are almost a unit in their predictions of an upward trend of the general ware pottery business.

Heads of the larger pottery concerns stated that their price lists have already been cut in excess of ten per cent., which is the amount of the wage reduction signed with the operatives a week ago at Atlantic City. Some concerns have even absorbed the supplementary seven per cent. cut to become effective in November. A majority of the plants are operating all departments part time. One or two plants, however, are shut down entirely. Heads of these works will not predict when operations will be resumed.

* * *

Importer Forecasts Increased Business

Joshua Poole has returned to his home in this country after an extended business visit in southern England. Mr. Poole was among the first cabin passengers aboard the White Star liner Olympic, arriving in New York August 9.

He is a clay broker, representing several English shipping interests in East Liverpool, Ohio. As a result of this trip, he forecasts a very fair business for the next several months. He reports the mines operating full time, after a lull of three months due to the great coal strike, which has just ended in England. Mr. Poole noted a splendid increase in clay shipments. He announced the manufacturers had not been advised of any reduction in ocean freight rates.

* * *

Controversy on Duty Rates

The United States General Appraisers have handed down a decision in a protest brought by L. Straus & Sons, New York, against an assessment made on white earthenware, figures and designs embossed thereon in the mold, as imported by the company. The material was assessed for duty at the rate of forty per cent. ad valorem, under the provisions of Paragraph 79. The Board, Judge Hay, decided that the duty should have been levied at the rate of but twenty-five per cent. ad valorem, under another provision in the same paragraph.

* * *

Potter Says Importations Are Increasing

W. L. Smith, Jr., East Liverpool, Ohio, secretary of the Labor Committee of the United States Potters' Association, gave an interesting talk at a session of the organization, at the Hotel Ambassador, Atlantic City, N. J., recently. He said that the pottery industry of the United States is now operating on less than a fifty per cent. basis. He stated that more and more pottery is being imported into this country from England, Japan, Germany and Austria, but the prevailing

small consumer demand has not affected the American industry adversely up to the present time.

* * *

Pottery Company's Sawmill Burns

Several hundred dollars damage resulted from a fire early in August in a sawmill connected with the pottery of Winslow & Co., at Portland, Me. The fire was discovered by an employe and the firemen were able to conquer it before other buildings had been damaged.

* * *

Maddock Equipping Hotel Complete

The Lamberton pottery of the Maddock Pottery Co., Trenton, N. J., has been busy with an order for chinaware from the new local hotel, to be known as the Stacy-Trent, and which will soon open its doors. The requisition for chinaware totaled about \$15,000, covering 42,000 pieces, ranging from sixteen inch platters to small individual butters. In addition, the order included specialties for the 234 guest rooms at the hotel, such as pin trays, match safes, candle sticks, and the like. All of the ware has been of special design, arranged by Emil Schneff, artist at the plant. It is of colonial tracery tapestry effect, in brown, pink and light blue shades. The order has been moving thru the plant for the past six months, and remaining pieces are now in the finishing and decorating departments. It is expected to have the entire order completed when the hotel opens for business on September 1.

* * *

Doubles Capital Stock

The Mutual China Co., Indianapolis, Ind., has filed notice of increase in capital from \$100,000 to \$200,000.

* * *

Fluor-Spar Company Dissolves

The Superior Fluor-Spar Co., Evansville, Ind., has filed notice of dissolution under state laws.

* * *

Abrasive Plant to Operate Soon

The Optical Abrasive Co., Southbridge, Mass., recently organized, has acquired a three-story building at Phillipsdale for its proposed new plant for the manufacture of abrasive materials. The structure will be remodeled and equipment installed at an early date.

* * *

Visits Santa Clara Pottery

Frank I. Simmers, president of the Hall China Co., of East Liverpool, Ohio, was a visitor to Santa Clara, Cal., recently and in company with C. E. Macrum, went out to look over the new plant of the Homer Knowles Pottery Co. Mr. Simmers was impressed with the progress the new company has made and with the efficient layout. The plant is practically completed and the making of molds will be begun very soon.

* * *

Terra Cotta Company Organizes in New York

The Terra Cotta Art Co., New York, N. Y., has been organized with a capital of \$15,000, to manufacture ornamental terra cotta products. The company is headed by E. F. Mattutat, A. Whitehead and M. Harris, 20 Broad Street.

Makers of Mission Tile to Expand Interests

R. F. Angulo, of Santa Barbara, Cal., who for years has been making the well known Mission tile, has discovered a good supply of clay of the quality of which these tile are made, in Monterey, Cal. Thoro tests of the clay have revealed it to be exactly what Mr. Angulo wants. The present plans are to start a plant in Monterey next summer which in addition to the Old Mission tile will also manufacture the flat, square tile brick that were used a great deal at the missions.

* * *

Pottery Nearing Completion

The plant of The Homer Knowles Pottery Co., at Santa Clara, Cal., is about two-thirds completed, with one-half of it roofed. The machinery is now arriving and as soon as a carload of plaster is received the manufacture of plaster molds will be started. Frank I. Simmers, president of the Hall China Co. of East Liverpool, Ohio, and C. E. Macrum, formerly of East Liverpool, visited the plant recently and pronounced it a very efficient layout.

* * *

Cooperative Research at University of Illinois

"During recent years, a considerable number of trade associations have been organized to study and promote the interests of the firms having membership in these associations. Important research work has been undertaken in laboratories which they have developed, or in cooperation with private or public laboratories," says Circular No. 9 of the Engineering Experiment Station, University of Illinois, recently issued. "The Engineering Experiment Station of the University of Illinois, the first of its kind in existence, was created by an act of the Board of Trustees, in 1903, in recognition of the need of more accurate knowledge of the materials and processes of engineering and a consummation of those researches upon which the engineering industry depends.

"The Engineering Experiment Station has frequently been requested to do commercial testing varying in its nature from the simple calibration of instruments and tests of materials to the performance of elaborate investigations of materials, machines, or processes, the results of which are to be considered confidential and available only to the individual or corporation for which the tests were made.

"Cooperation between the Engineering Experiment Station, individuals, firms, corporations or associations in the conduct of engineering research, affords the most inspiring opportunities for the investigation of large and important problems, the solution of which involves expenditures that are too much for the institution to provide; for the performance of a service of immediate importance and of great value to engineers and the public; and for the establishment of relations which will be of mutual advantage to the industries and the Station.

"Some of the research work done in accordance with cooperative agreements with associations, corporations and individuals, has been the investigation of the manufacture of gas from Illinois coal; investigation of the coking of Illinois coal; investigation of the stresses in railway track; investigation of the stresses in chilled cast iron car wheels; investigation of the effect of the size of coal on locomotive performance; investigation of warm air furnaces and furnace heating; investigation of viscosity and electrical conductivity of glass, and investigation of the friction losses and power requirements in the proposed ventilating system for the New York and New Jersey vehicular tunnel to be constructed under the Hudson river."

The SUPERINTENDENT

Helpful Hints for Practical Men
Whose Problem is Maximum
Production With Minimum Cost

Eliminating Salmon Brick

"The salmon brick can be eliminated altogether tho it is not generally profitable to eliminate it," said George C. Landis, president and manager of the New Cumberland (Pa.) Brick Co., in conversation with a representative of *Brick and Clay Record*. "As we get about ninety-five per cent. of hard brick, it is generally simpler for us to sell the soft brick at a lower price than it is for us to put them thru a process that would turn them into hard brick.

"But thru one period of about two years, the contractors to whom we sold our brick would take none but hard brick and we had a big accumulation of salmon brick, about 400,000 of them. Most of them had lain out all winter and had become soaked with the rain; and in some cases the water had sunk into the brick, where it had frozen and burst the brick. We lost perhaps three per cent. of the brick in that way. At the end of winter, we determined to do something with that mass of soft brick. We decided to try burning them over again. We had never heard of anyone doing that, but thought we would try it and see how it would work out. We were dubious about its success, especially as many of the brick were still frozen. In fact, we had to pick some of them apart with picks.

"We filled two kilns with them and fired about the same as we would with green brick, except that we started a very slow fire at first and increased it very gradually, as we feared the effects of the frost in the brick. We burned those brick the same time as we would have burned kilns of green brick. What surprised us some was that the shrinkage in height of the forty-two layers was eight inches, just about the same as it would have been with green brick, which shrinkage we have generally found is around ten inches. Therefore, the salmon brick has not yet reached a stage where it has undergone more than about twenty per cent. of its possible shrinkage. The experiment was a complete success, and all of those brick were sold as hard brick; and no one could have told the difference between those reburned brick and other hard brick.

"For boss here I have an old and successful brick burner, George Gold, who burned brick for thirty-five years. He does not burn brick now, but he superintends the burning. He will tell you how he gets so large a proportion of hard brick."

"We get about two layers of salmon brick on the top and one layer on the bottom," said Mr. Gold. "What may seem

remarkable is the fact that we do not get salmon brick on the sides or in the corners. With many brick kilns, the corners are big producers of soft brick. I have found that this can be entirely obviated by controlling the heat and ultimately making it as great on the sides and in the corners as anywhere else. To do this I add fine coal on the last day of the burning, which is the day of greatest heat. By that time the brick on the sides have drawn away a little from the walls and corners, and a space has been opened down which I can drop fine coal. I put in about a ton of coal, using more in the corners than in the sides. I do not try to fill up the space with



Four Updraft Kilns and New Dryer of New Cumberland (Pa.) Brick Co.

coal, as that might create too much heat. I want the coal to catch on the ends of the brick and so distribute itself everywhere. In a short time it has all taken fire and has created an upward draft in the sides and corners that draws the heat from the center. It is not so much the heat from the ton of coal that does the work of burning as it is the drawing of the surplus heat from the center of the kiln to the sides and corners. The result is that we get red brick right up to the sides. Some of the brick are a little blackened on the ends but those brick go for arch brick. In selecting the ton of coal for this distribution in the sides and corners, I use river coal

Time-Temperature Factor in Burning

During the past year, this department has contained a series of short articles pertaining to burning clay ware. Each item has covered some point, such as, the definition of the various stages of burning, chemical changes that take place, methods of firing, precautions to note, etc.

In bringing the clay ware thru the various stages of burning to maturity of the product, the time-temperature factor is an extremely important consideration, altho in general it is not given sufficient attention. A certain result may be obtained by the use of a higher temperature for a shorter time, or a lower temperature for a longer time. This fact we see constantly illustrated in the firing of all kinds of clay products, the melting of glass, the softening of pyrometric cones, etc. It is for this reason, that cones which are frequently used as a guide in burning are not true indicators of temperature, since a variation of from 30 to 60 deg. C. in the deformation temperature of a cone is possible according to the time-temperature rate at which it is burned.

(fine anthracite) if not much heat is needed to complete the burning. If a considerable hardening of the side and corner brick is still needed, I use fine bituminous coal, which burns faster. The river coal also slips down the cavity more and does not stick on the ends of the brick as easily as the soft coal. The estimate of the ton of coal to be used in this way is for a ten-arch kiln. This applies to the clays we are using here. As clays differ the methods of burning must differ to some extent."

The New Cumberland (Pa.) Brick Co. has four up-draft kilns. The drying room capacity is 33,000 brick a day. At present they are running with half force, turning out 16,500 brick a day. For two years previous to the present dull period they were running full capacity summer and winter with no shut down. The plant has been in operation about six years, making a clay brick.

* * *

Losses You May Avoid

It is more and more noticeable that much greater consideration is now being given to the construction and general design of kilns, and generally speaking, to the installation of ceramic plants for the manufacture of both high grade and common products. This is evidenced by the abundant literature on that subject. Everything tending to reduce the net cost of brick or of other clay products is being examined and tried out.

The brick manufacturer, in order to secure satisfactory combustion and an efficient utilization of the waste heat, ought to know the manner in which the coal is being burned, and supervise the quantity consumed. He should know the conditions from the bottom of his kiln up to the top of the stack by means of measuring, controlling and verifying apparatus. He ought to pay attention at the same time to the coal and ash manipulation and transportation. Any apparatus required to inform him on these various points will, of course, necessitate some expense, but it will largely be compensated by a real saving.

Furthermore, the brick manufacturer who knows the use of coal should also know the use of the heat generated. There are heat units wasted unavoidably and there are others that are not. Among these are the following:

1. Heat taken away in the stack by the gases at a temperature often higher than 400 deg. F. In a periodical kiln the losses arising from this source easily amount to thirty-five per cent. One avoids it by building a continuous kiln, well planned.

2. Heat lost by radiation. This quantity can be estimated at twenty-five per cent. Sometimes it is even more of the total heat produced. This loss can be reduced by placing special heat insulation brick inside the kilns.

3. Heat lost by rain or snow falling on the kilns or filtering in to the foundations. One avoids this loss (or, at least one reduces it), which is hard to estimate, but, representing from $\frac{1}{2}$ to one quintal coal (hundred weight) per 1,000 brick in winter time, by providing the kilns with roof and gutters, by building good foundations and in case of need, in establishing a drainage system. Translated from the *Review of Building Materials*, Paris, France.

* * *

Still Making Brick in Up-Draft Kilns

In the brickyard of the Cambria Steel Co., at Johnstown, Pennsylvania, brick are still being made in up-draft kilns. J. N. Hawken Smith, who showed the representative of *Brick and Clay Record* about, explained, "We are still using the old, rectangular up-draft kilns, because we have not yet gotten around to rebuilding; when we do we will doubtless put in down-draft kilns. Plans were made for this rebuilding before the

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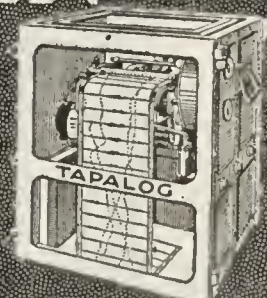
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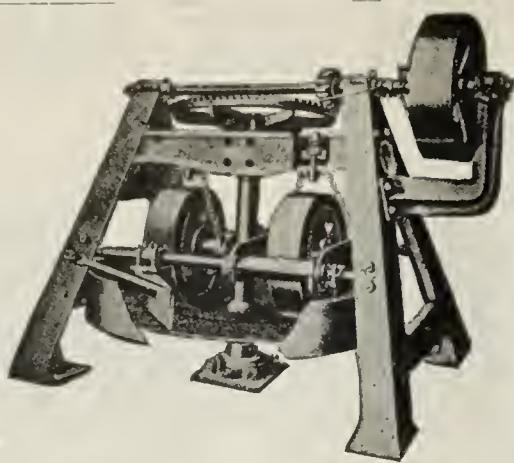
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war, but from that time on building conditions have been so very unsatisfactory that we are simply waiting, as the easiest thing to do.

"We are making about 27,000 a day now of end-cut, common brick, in three kilns. They are, however, big ones, each kiln holding 350,000 brick. It takes ten days to burn a kiln, which is much longer than it takes in a down-draft kiln. As it takes quite a while to set and empty a kiln, the three kilns keep us busy.

"In the drying, the down-draft kiln puts us at a disadvantage, as we cannot use the waste heat from the kilns, and have to dry with steam. The waste heat passing out of the tops of the kilns compels us to remove the roof of the kiln after the burning is well under way, or the roof would take fire, which is a second disadvantage of the up-draft kiln.

"We are piling our brick thirty-eight layers high. The man that was here as foreman before me made a series of experiments to find out what was the best height for piling. He found it to be thirty-eight layers high. He could get just as good a burn by using a less number of layers, but that did not give him the maximum of brick. In either case the soft brick were the two top layers and the brick in the corners, where the heat did not circulate readily."

The clay and shale used are brought in by steam road cars from a distance of one and a half miles. The cars are run onto an elevated trestle work in a shed and their contents dumped onto a long ridge of material, under which runs an endless belt conveyor 357 feet long, which conveys the material to the grinding mill. Said Mr. Hawken Smith, "We use clay and shale and take them about as they come. We like to have them mixed about half and half. In wet weather we have to use a little more shale, to make the mixture grind. In dry weather we can use a little more clay than shale."



Placing a Belt on the Pulley

In the July 26 issue of *Brick and Clay Record*, a short item was published on "How to Place a Belt on a Pulley." The item stated that the belt may be placed on the pulley while stationary, using a screw driver to force the belt on the wheel. Many people find it a difficult task to throw a belt on a pulley while the latter is in motion due to the fact that it is more in the knack of knowing how than in the strength required.

W. P. Conaway, production manager of the Paducah Pottery Co., Paducah, Ky., has made the following suggestion on how to perform the task of placing a belt on a pulley. He states:

"To place a belt on a pulley while in motion is very easy if you will go at it in the correct manner no matter how large the belt is unless it is beyond throwing on by hand. However, there are not many such large size belts to be put on pulleys in the clay products plant. The belt should be lifted upon the face of the wheel as far back as the slack will permit. Take the butt of hand and bear in mind that this pulley is revolving at a given speed. Force your hand at as near the speed of the pulley as possible and the belt will grasp the pulley and run on.

The fault with most people throwing on a belt is that they do not consider that they must move the belt at the same speed as the pulley is revolving. If you will just push a steady force against the belt it will slip clear off the pulley almost every time.

"I have seen many men who were possessed with great strength trying to force a belt upon a pulley by main strength and failed. On the other hand, I have seen a certain small man who does not weigh more than 120 pounds, catch the belt and with one hand follow the speed of the pulley and throw the belt on with ease."

IN *the* WAKE of *the* NEWS

Being Brief Mention of a Host
of Interesting Happenings in the
Varied Fields of Clayworking

Death of Refractory Official

Charles C. Gorsuch, chairman of the Board of Directors of the Savage Mountain Fire Brick Co., of Frostburg, Md., died on July 6, at his home in that city.

Hold Services for Harvey B. Rogers

Funeral services for Harvey B. Rogers, age eighty-one, a pioneer brick manufacturer of Brazil, Ind., who died August 7, at his home were held August 9. Mr. Rogers established the first brick plant in Brazil and made the brick used in several of the public buildings and churches. He was the oldest member of the Brazil Lodge of Odd Fellows and a veteran of the Civil war. He is survived by three children.

Accepts New Position

C. E. Carpenter, who has been connected with the Postville (Ia.) Clay Products Co. as superintendent, has resigned that position and accepted the position of superintendent of the Adel (Ia.) Clay Products Co. He will take up the duties of his new position in September.

Governor Honors Clay Plant Official

C. O. McNamee, general manager of the Fulton (Mo.) Fire Brick Co., was honored recently by Gov. Arthur B. Hyde, the newly elected Republican governor of Missouri, by being named a member of the board of managers of the Missouri School for Deaf, located at Fulton, one of the largest and most important state educational institutions of Missouri. At the reorganization of the board Mr. McNamee was further honored by being elected president of the reorganized board.

Combining Business and Pleasure

Robert S. Dingledine, secretary and treasurer of the Franklin Brick & Tile Co., of Columbus, Ohio, left late in July on a three weeks' automobile trip thru the East. He will combine business with pleasure. He took his order book along and will work when he stops. It is the first time in years that Mr. Dingledine has taken a vacation and also tried to sell the product of the company. Both experiences are proving very interesting to him. At almost every stop he mails an order in to the concern.

M. B. Robb is Director of Power Company

Marshall B. Robb, secretary of the Wabash Valley Electric Co., at Clinton, Ind., who has been identified with the brick and clay industry in the western part of the state for several years, with his father J. V. Robb, has been named as one of the directors of the new Indiana electric corporation, a corporation which will involve the consolidation of \$18,000,000 worth of property held by various utilities in the central part of the state. The consolidation means that a high tension system will be strung over central and western parts of the state which will serve virtually every industry in that section including the brick and clay plants.

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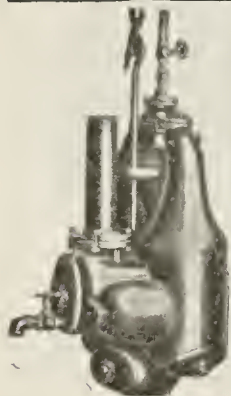
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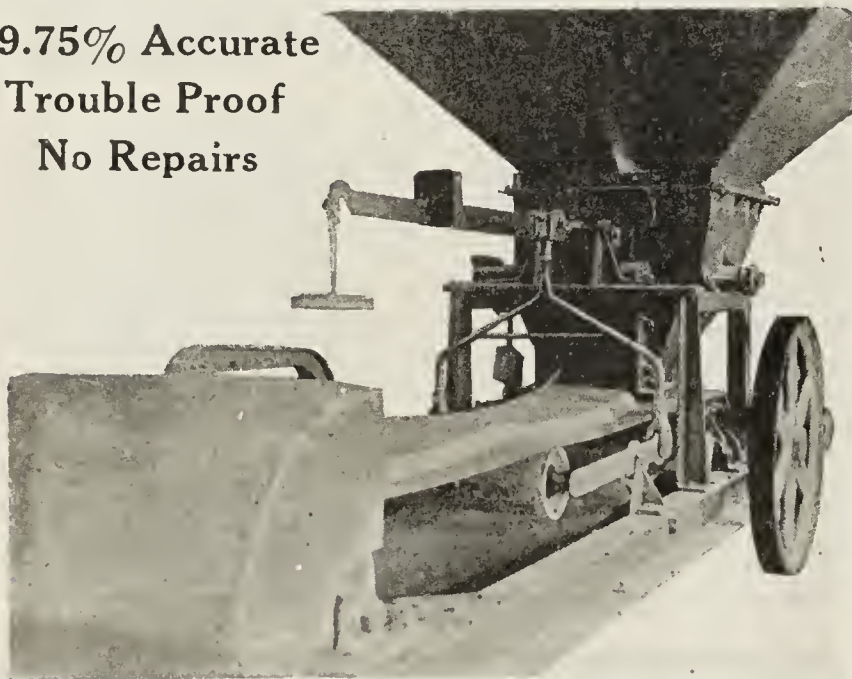
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Pittsburgh, Pa.

Returns to Former Position

Howard White, formerly sales manager of the brick department of the Hocking Valley Products Co., of Columbus, Ohio, is again back in Columbus after being absent for several years as an employe of the Alliance (Ohio) Brick Co. He has been placed in charge of the brick department of the Hocking Valley Products Co., succeeding Robert Taylor, Jr., who resigned. Mr. White is welcomed by his many friends in Columbus. He will look after the sales end of the business particularly. The plant located at Greendale, has been in operation at about maximum capacity for some time and as a result a large stock has been accumulated.

High Rail Rates Increase Truck Shipments

Freight rates more than anything else, perhaps, are retarding the manufacture of brick in the Birmingham, Ala., section. As a result of the high freight rates many brick are being moved from Birmingham in large automobile trucks, a distance of fifty miles or more. Brick men say that more brick are now being moved by truck than ever before, and they are of the opinion that the railroads will permanently lose much of the brick tonnage from the Birmingham district.

Material and labor are both plentiful. The price of building brick is nowhere holding up construction. The market shows a "spotty" condition and an up and down tendency.

Labor Trouble Halts Building in Frisco

The brick and clay manufacturing situation in San Francisco and cities of the bay region is virtually at a standstill on account of the strike among members of the building crafts. Since May of this year there has been a tie-up in the building trades due to the opposition of the unions to the American plan, or open shop, which plan means a reduction in wages of 7½ per cent.

On August 8, a general strike went into effect which called off from jobs the few non-union men who were at work. On August 10 every building trades craftsman in Alameda county was called from his job in the general strike voted by the Alameda County Building Trades Council. The vote stood 569 to 384 in favor of striking. P. H. McCarthy, president of the Council, said that those who favored the American plan "have set out to eliminate the unions and it cannot be done. . . . The building trades mechanics that are being brought into this city to work during this controversy will not become members of this community. They have families in other cities and the money they make here is sent away to maintain them. The men who are raising their families in this city will not take kindly to any procedure that is calculated to destroy the unions. It is not a sane thing to do bring men from out of this city to fill the jobs that the men here feel belong to them. It will cause trouble."

C. G. Berg, who represents the brick manufacturers of San Francisco said in an interview that there is a regrettable lack of understanding among members of the unions in regard to the American plan. The manufacturers do not want to destroy the unions. They also know that unions are here to stay, but they believe that a man has a right to work without the sanction of the union if he so chooses. In other words, if there is work and a man needs a job he ought to have freedom of choice in the matter.

Atholl McBean, secretary of Gladding, McBean & Co., of that city said in a speech made before the Kiwanis Club, August 11: "The American plan gives the employer the right to employ whom he chooses, whether the one employed is non-union or otherwise, and it gives the employe

the opportunity to work whether or not he belongs to a labor union.

"This is only fair for whether a man is with a union or not he has a right to work for whom he chooses and when he chooses. We hope that our efforts will be such that we can bring about conditions that even labor can subscribe to."

Mr. McBean is president of the Industrial Association of San Francisco, a new organization, the purpose of which is to effect and maintain sound and stable industrial relations and to keep San Francisco attractive to those engaged in constructive enterprises, whether as workmen or investors. It maintains an organization for continuous study and investigation of industrial conditions, looking to prevention rather than to cure for disputes. The association believes that any serious industrial dispute involves three interests—the public, the employe and the employer—and that the public interest is foremost.

Face Brick Plant in Florida

The Nu-Tex Brick Co., Tampa, Fla., has construction under way on a new local plant for the manufacture of face brick. It will have a capacity of about 30,000 brick a day.

Settle Three Weeks' Wage Dispute

Differences between the Middleton Brick Co., of Canton, Ill., and its employes have been settled. The settlement was reached after the plant had been shut down for three weeks. Tho the company held for a reduction of thirty per cent. the final agreement specifies a cut of but fifteen per cent. in the employes wages.

Incorporates to Make Fire Clay Products

The Steam Boiler Materials Co., 718 W. Sixty-third Street, Chicago, has been incorporated with a capital of \$15,000 to mine, manufacture and deal in products of fire clay, fire brick, furnace linings and associated products. Incorporators are Charles A. Miller, Arthur T. Leasy and Charles Claricoates.

Changes from Closed to Open Shop

After its strenuous fight with the unions, the Danville, (Ill.) Brick Co., has added face and common brick to its product of manufacture. It has not ceased to make paving brick, but has enlarged its capacity and is at present making over 100,000 face brick per day. The deep shale from which the pavers have been made is producing something new in face brick. The company is manufacturing a vertically scored product known as "Mingled Tuxedos," varying in shade from light chocolate to dark chocolate and black. A rough faced brick, dark red in color, is known as their "Red Hearts." A specialty, which the concern will make a particular effort to produce, will be a smoothfaced brick, varying between dark and chocolate, sanded, which will be known as "Community." An additional cutter of the rotary type is being installed at the plant. Since the fire of last June the plant has been completely re-arranged and re-built with fire-proof construction.

The Danville Brick Co. has had a considerable amount of labor trouble and to emerge from a closed shop to an open shop in a community where unionism is very strong, was no small task. The unions put up a rough fight. In the employment of labor, the company gave preference to the returning soldier out of a job. One young soldier, who was still recovering from a long illness as a result of his over-seas experience, was very severely beaten by one of the National Officers of the Union and while he was down was kicked and

Electric Motors and Generators for all requirements of the Brick and Clay Industry

■ ■ ■

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ERIE PENNSYLVANIA

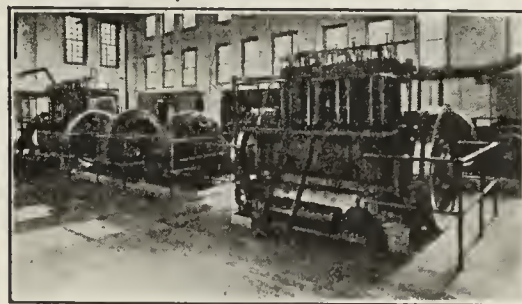
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GAS ENGINES

For Belt Drive or Direct
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If in need of power and located in natural gas district, or if your power costs you over $1\frac{1}{4}c$ Per K. W. Hr., write

Hope Engineering & Supply Co.

Pittsburgh, Pa. MT. VERNON, OHIO Tulsa, Okla.

The Invincible Barrow



This favorite barrow has lost none of its popularity. We furnish them for either brick or sewer pipe and with plain wood, babbitted or spring bearings. They are honestly constructed thruout. On account of increased manufacturing facilities we are able to make immediate delivery.

Write for prices.

TORONTO FOUNDRY & MACHINE CO.,
Toronto, Ohio

PEABODY COAL COMPANY

FOUNDED 1883

OPERATING 36 MINES
WITH ANNUAL CAPACITY
OF
18,000,000 TONS



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KANSAS CITY
MINNEAPOLIS

DEADWOOD, S. D.
SPOKANE, WASH.
SHERIDAN, WYO.

"PEABODY FOR SERVICE"

his spine dislocated. This officer was indicted and will be tried for "assault with intent to kill." There were seven sluggings and two riots growing out of the fight, and forty-two indictments are now pending before the courts in Vermilion County. Picketing was stopped by a federal injunction order, issued May 6, and since that time labor has been very plentiful and the plant has been running at full capacity.

Barron Brick Has Best Month in History

J. S. Barron, president of the Barron Brick Company, of Chicago, and Roanoke, Ill., states that their shipments for July were more than twenty per cent. greater than their previous high monthly record. Their plant has been operating for over five years and this statement therefore means that July was the best month in their history. Mr. Barron stated that he is certain that we have passed thru the worst of the present stagnation of business. It is to be regretted that some of the pessimists and calamity criers could not see the smile and feel the optimism that pervades the Barron offices. Mr. Barron criticized severely those who are always talking about and thinking about the most disagreeable features of their business. The orders they are receiving at the present time total more than fifty per cent. in excess of their capacity.

Brick Plant, Never Used, to Start

The Lloyd Brick plant at Shoals, Ind., which has never been operated as yet, is expected to start work by the first of the year, making paving brick and tile.

Inspects Brick Paving Without Cost to City

At Jeffersonville, Ind., Mayor Newton H. Meyers, who believes in vitrified brick street paving, has put his son, Perrin Meyers, who is connected with one of his father's plants, at work inspecting all brick that have been laid on some of the new streets, and marking those which are defective, for replacement. The plant is closed down just now, with the result that he was transferred to street work at no cost to the city.

Guaranteeing Prices Against Decline

There will be no further reductions in fire brick and fire clay prices, says the Cannelton (Ind.) Sewer Pipe Co. In a letter sent to its dealers the company absolutely guarantees purchasers against any further declines in price for 1921. In its new prices the Cannelton Sewer Pipe Co. has not only given its customers the benefit of labor reductions which have taken place but has anticipated further declines which may be made. The prices now quoted by the company will stand for the balance of this year.

Selling Brick to School Board

Representatives of several brick companies in Indiana and Illinois met with the Board of School Trustees at Terre Haute, Indiana, recently and made sales talks in favor of their particular brand of brick for the new school buildings in that city. Each salesman was limited to five minutes by the Board. At the close of the talks the Board took all the propositions under advisement and announced that it intends to go to Crawfordsville, Ind., soon to view some of the schools there in order to reach a decision on the kind of brick to be used.

Picric Acid Can Be Obtained Very Cheaply

According to the "Better Iowa" bulletin of August 15, the extension service of Iowa State College and the county farm bureaus are anxious to find out how much picric acid

Iowa farmers are in need of. County agents accept orders and if enough come in so that a carload of the acid can be purchased for distribution in the state this explosive can be delivered for between twelve and fourteen cents per pound. It is much more powerful than forty per cent. dynamite and considerably cheaper, since present prices on dynamite are thirty-five cents per pound.

This offer is made possible thru the Bureau of Public Roads which has a large quantity of the picric acid on hand secured from the War Department. They will not ship the material into Iowa except in carload lots and if this quantity, 24,000 pounds, is ordered the material will be sent. This explosive has many advantages over dynamite, as it is less sensitive, fires at lower temperatures, has no toxic effects and is more powerful.

State Brick Plant Burns

Fire of undetermined origin recently destroyed the brick plant at the state penitentiary at Lansing, Kas. The loss was estimated to be approximately \$2,500 by R. H. Hudspeth, acting warden. The fire was confined to the brick plant.

To Build Brick Plant at Wichita, Kas.

Plans are being formulated for the establishment of a brick plant in Wichita, Kas., it is announced. According to the present plans of the promoter, Oliver Mourning, 134 N. Main Street, the plant will be completed and in operation late this fall. C. A. Taylor, 308 Union National Bank Bldg., and J. F. Purcell, 1658 S. Topeka Avenue, are associated with Mr. Mourning in the project.

Illinois Corporation Licensed in Kentucky

The Western Clay & Mining Co., of Illinois, with offices at Paducah, Ky., has been issued a license by the Secretary of State of Kentucky to do business in the state as a foreign corporation.

Two Large Contracts Let at Ashland, Ky.

Two good brick contracts are in sight at Ashland, Ky., as the contract has been let for an eleven story brick and stone building for the Ashland National Bank, and the general contract has also been let for erection of a new Masonic home to cost \$250,000.

Shipping Orders for Many Months

The Coral Ridge Clay Products Co. and P. Bannon Pipe Co., of Louisville, Ky., have both started shipping hollow tile on the Dawson Springs Federal Hospital building, this work running into large figures, and insuring steady shipments for some months to come.

Will Make Dry Press Mat Brick

The Progress Pressed Brick Co., Louisville, Ky., has completed burning one kiln of brick, and has just started fires in a second kiln. The production of additional brick has been stopped for the time being, as it is believed that these two kilns will run the company well into the fall. Some improvements to the pulverizer are to be made, and it is also planned to change the dies in the dry press machine to make mat brick.

One Million for Schools in Louisville

Louisville, Ky., is planning to place a \$1,000,000 school bond issue on the ballot in November, leaving it to the voters to decide whether or not additional school buildings shall be erected. The interest rate has been left blank, in view of the fact that a \$2,000,000 sewer bond issue, bearing 4½ per cent., is useless, as it has been impossible to sell the bonds with such a low interest rate.

Efficiency with Comfort



\$8.40 per dozen — \$96.00 per gross

Have you ever worked real hard against such difficulties as sore and bruised hands? Do you remember how comfortable it was to pull on a good pair of gloves and then try the same work again?

Well, Mr. Clay Plant Mgr., handling brick is REAL hard work, and a man has to handle only a few of them to get his hands in such condition that efficiency is almost impossible.

Give your men hand protection. Furnish them with a pair of TUF-TANNED KANTRIP MITTENS and HAND PADS. It will increase their working capacity.



\$4.50 per dozen

\$50.00 per gross

NOT CONVINCED?

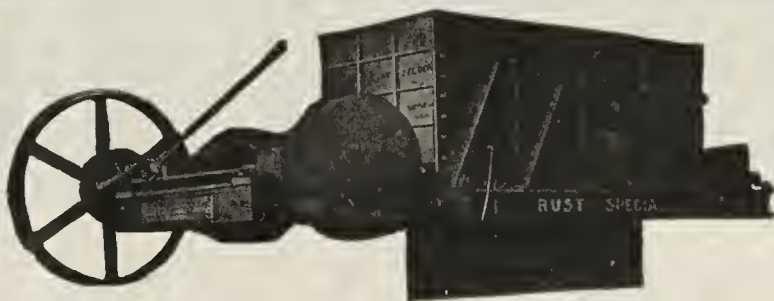
Just let us send you a dozen pairs on trial. There will be absolutely no obligation. All we ask is that you give them a fair trial, and then, if not thoroughly satisfied, fire them back to us at our expense.

Write today for yours

Des Moines Glove & Manufacturing Co.

508 Fourth Street,

DES MOINES, IOWA



Better Production With More Speed

This clay feeder-mixer speeds up production and helps you to get full capacity out of your pug mill and dry pan auger. It takes heavy loads, feeds itself and delivers to the pug mill without any attention. It tempers the material perfectly, thus improving the finished product.

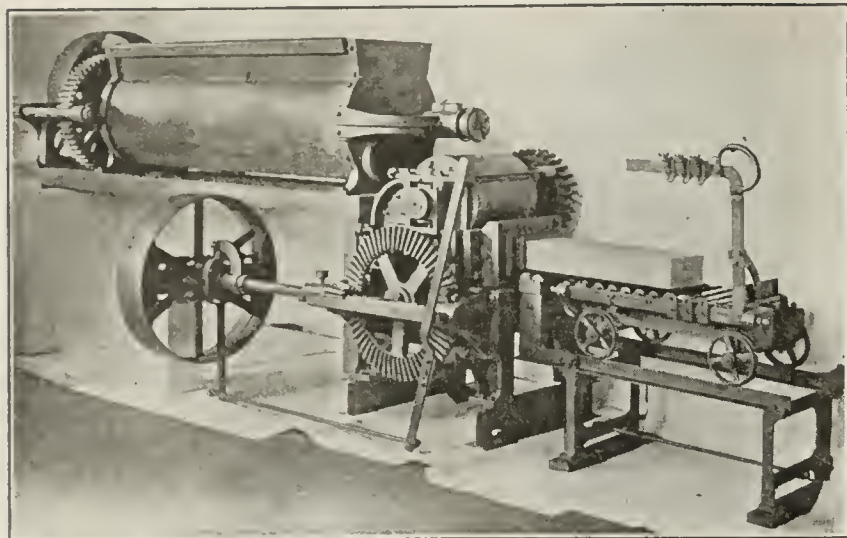
THE RUST SPECIAL Feeder-Mixer is made extra strong for hard work and large capacity. All gears run in oil and are protected by housings that keep out the dust and dirt. The MARION will invariably pay for itself in less than a year. It saves the labor of 3 or more men.

A special bulletin which covers our line of clay feeders and mixers will be sent to you without obligation. These machines have been such a help in improving ware, speeding production and saving labor, that we urge you to ask for this bulletin today.

Remember there is no obligation.

Marion Machine Foundry & Supply Co.
MARION, INDIANA

The Modern Way



A Unit for Stiff Mud Ware

From Laminating Clay Surface Clay
Short Bonding Clay Fireclay or Flint

This is not a DREAM, HOT AIR or a TOY, but the MOST simple, economical and practical unit of machinery on the market.

Number 1 Unit as shown has capacity of 10 to 20 Thousand. Larger units are furnished with simple automatic cutter, guaranteed.

CLAYCRAFT SERVICE is at your command.

Write Us

Claycraft Service Co.

503 Wainwright Bldg.
St. Louis, Mo.

Making Hollow Tile for Facing Purposes

J. Crow Taylor, secretary of the Kentucky Clay Products Association, was recently in western Kentucky attending a group meeting, and while in that section of the state visited the two plants of the Clark Mfg. Co., operated by the Clark Brothers, at Ashbyburg, on Green River, and Mosleyville, ten miles from Owensboro, Ky. At each plant there are three round down-draft kilns, twenty-eight feet in diameter.

The company produces hollow building tile, drain tile and some brick. It features a single cell, 4x3x12 hollow tile, smooth face, which is being used to a considerable extent in that section not only in garage and business buildings, but also in residence construction. The three Clark brothers are all living in homes of this tile, and recently supplied material on a \$20,000 school house. The concern at this time is getting up a publicity campaign on its hollow building tile for district use. This tile is made with one face plain and one scratched, and is used as a facing material without stucco.

Resumes Work After Twenty Years Idleness

The brick plant at New Portland, Me., has announced the burning of the first kiln containing some 200,000 brick. The plant has been in disuse for about twenty years but the quality of clay obtainable has led those responsible for the starting up of the company to believe that brick could be made profitably. The men interested in the concern are O. W. Chase, H. W. Hennesay, A. L. Henderson and A. A. Johnson.

✕ ✕ ✕

A new brick yard has been opened at North New Portland, Me.

Plant Closes for Season

Brick making has been suspended for the year at the yards of the Hampshire Brick Co. at Hadley Falls, Mass. Two large kilns are yet to be burned, however. The Lynch brick plant in the same town is burning its second large kiln.

Dismantles Old Plant to Equip New

The Bay State Brick & Stone Co. of Haverhill, Mass., which recently purchased the property of the Auburn (Mass.) Brick Co., is dismantling the plant and will remove the machinery and other equipment to a new plant now in process of construction at Haverhill. The new plant it is claimed will be one of the largest in the eastern part of the state and operations are expected to be started about October 1. The Auburn property, originally operated by the Worcester Sand Lime Brick Co., will be sold. George L. Baldwin, formerly manager of the Auburn plant, is president of the new Bay State Corporation.

Establish School for Bricklayers

A school for the purpose of training men to become bricklayers has been established in St. Paul, Minn., by the Master Builders' Association of the twin cities. Students of any age are permitted to attend the classes and it is hoped that eventually a large industrial school will be developed from this beginning.

Forty students are enrolled and a six months' course of instruction is laid out. The instructor is E. A. Mitchell, a bricklayer with forty years experience. A fund supplied by general contractors supports the school and the graduates will be given work by these same contractors. Sessions are held three times a day, morning, noon and night, giving students an opportunity to work part of the day while studying. The fee charged for instructions is returned when the student shows proper progress in his work.

STEVENSON

DRY PANS

WET PANS

ROLL CRUSHERS

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Bulletins
on
Request

Fulton, Mo., Plant Has Reopened

The plant of the Fulton (Mo.) Fire Brick Co., which has been running full time during the month of July, bids fair to continue in operation for the present at least, according to officials of the company. The business outlook is fair, it was reported at the office of the company, altho orders have been coming in fairly steady and have been on a character of goods that have enabled all departments to keep going. C. O. McNamée, general manager of the company, has just departed for the west on an extended trip in the interest of the company in the hope of securing additional orders. The company's major business is furnishing linings for locomotives that burn oil, and the general unsettled business conditions, which has affected the railroad business, curtailing many trains, has also resulted in a lessening of orders from this source. The resumption of operations at the plant during the month of July came after a short period of inactivity, during which the plant was closed.

Will Absorb Competitor

Rumors are floating around to the effect that the Duffney Brick Co. of Schenectady, N. Y., will shortly take over the interest of the New England Brick Co., also of Schenectady. The plants and properties lie very close together.

Brick Company Increases Capital

The Champlain Brick Co., Mechanicville, N. Y., has filed notice of increase in capital from \$40,000 to \$100,000 for proposed expansion.

Obtains New York Charter

The Stewart Clay Co., Brooklyn, N. Y., has been chartered under state laws with a nominal capital of \$5,000, to manufacture and deal in burned clay products. The incorporators are J. Goldberg, M. Krangel and B. Smyle. The company is represented by C. A. Affenkrant, 38 Park Row, New York.

Trebles Capital Stock

The Alger (Ohio) Clay Manufacturing Co. has increased its capital stock from \$12,000 to \$36,000.

High Rates Stifling Paving Brick Industry

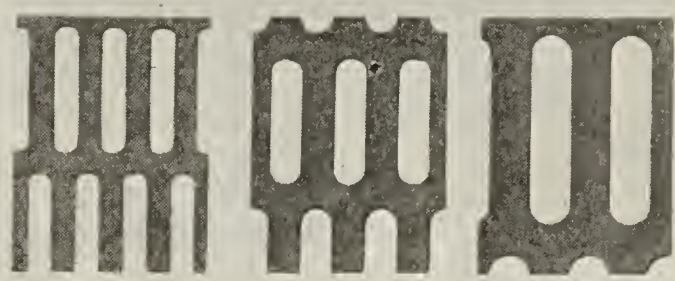
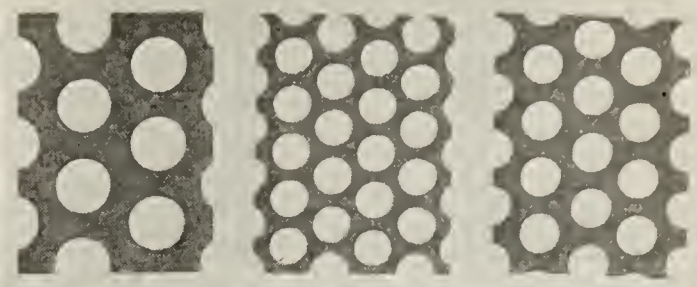
High freight rates have practically destroyed the paving brick manufacturing industry, James G. Barbour, secretary of the Metropolitan Paving Brick Manufacturing Co., told the Public Utilities Commissions at a hearing at Columbus, Ohio, recently.

Barbour told members of the commission that a few years ago, before the increase in the freight rates, his company frequently made large shipments of its products, as far as 500 miles, but that now, with the high freight charges, practically all of the brick sold by the company are shipped within a radius of 100 miles. He declared that the loss of the distant markets was not due to competitors securing the trade, as he said there are no competitors.

Barbour presented a number of exhibits which, he said, showed how the increase in freight rates since 1911 has restricted the sale and movement of the product of his company. During the seven years between 1911 and 1918, he said his company shipped an average of 25,000,000 brick outside the state each year and 34,000,000 within the state. For the three years 1918 to 1920, he said the sales dropped to an average of 5,000,000 a year outside the state and inside the state to 19,000,000 a year.

Mr. Barbour also gave a comparison of freight rates to total cost of road construction in various materials. At a rate

Perforated Steel Screens



For Screening Clay, Shale, Sand, Gravel, Stone and Cement

All sizes and shapes of holes in metal of proper thicknesses to give the best screening results.

Sheets furnished flat or rolled to shape for revolving screens.

THE HARRINGTON & KING PERFORATING CO.

635 N. Union Ave., Chicago, Ill.

NEW YORK OFFICE: 114 Liberty St.

You won't have to worry about competition if you treat your clay with

R. H. Precipitated Carbonate of Barytes

You can safely guarantee that your brick will be

Scum-Proof

You can get a higher price and influence architects to specify your product because Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's dependable.

We have a complete line of high grade chemicals for the clay industry

The Roessler & Hasslacher Chemical Company

709-17 Sixth Ave.

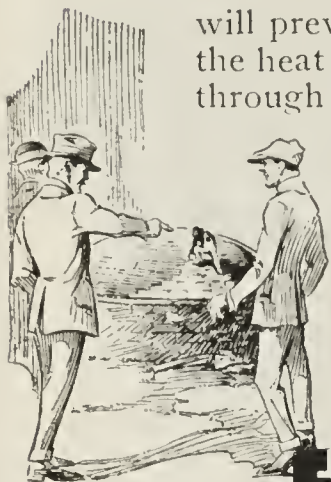
New York

Chicago, Ill. Cleveland, O. St. Louis, Mo.
Kansas City, Mo. San Francisco, Calif. Philadelphia, Pa.
Boston, Mass. New Orleans, La.
Pittsburgh, Pa.

Five Hundred Dollars Escaped Through This Brick Crown

"Last year," said Sherman, "five hundred dollars in real money escaped through the crown of this brick kiln by excessive heat radiation.

"But this year, I am going to turn that five hundred right back into our treasury and perhaps more, too. I have had the entire kiln insulated with Sil-O Cel brick. Actually enclosed in a heat impenetrable covering that will prevent the loss of from 60 to 70% of the heat which ordinarily escapes, unused, through radiation."



Interesting data on the savings that can be accomplished through Sil-O-Cel insulation of Ceramic Kilns are contained in Bulletin Y-5A. Write our nearest office for a copy.

SIL-O-CEL
PREVENTS HEAT PENETRATION
TRADE MARK REGISTERED U.S. PATENT OFFICE

CELITE PRODUCTS COMPANY

NEW YORK-11 BROADWAY DETROIT-BOOK BUILDING DENVER-SYMES BUILDING
PHILADELPHIA-LIBERTY BLDG CHICAGO-MONADNOCK BLDG LOS ANGELES-VAN NUYS BLDG
CLEVELAND-GUARDIAN BLDG ST. LOUIS-RAILWAY EXCHANGE BLDG SAN FRANCISCO-MONADNOCK BLDG
NEW ORLEANS-WHITNEY CENTRAL BANK BUILDING

of \$1.40 per ton for all commodities, he said the freight cost in construction of one mile of brick paving is \$2,800; one mile of asphalt \$161; one mile of cement concrete \$560; one mile of gravel and crushed stone, \$4,900.

Finds No Change in Eastern Markets

Emmet Howard, head of the Columbus (Ohio) Fire & Face Brick Co., has returned from a business trip to Washington, Baltimore, Philadelphia and New York. He reports conditions showing little change from those in Ohio. There is an increasing number of inquiries but actual business is just about the same as it has been for several weeks.

Big Increase in Permits Over Last August

Up to August 15 the Columbus (Ohio) building department issued thirty permits for dwellings as compared with a total of twenty-eight for the entire month of August last year. All building permits for the first half of the month totaled 177 with an estimated valuation of \$300,000. It is believed that the total for the month will exceed 300 permits and a valuation of \$550,000. The total number of permits issued in August, 1920, was 249.

Demand Increasing in Every Line

W. P. West, of the Franklin Brick & Tile Co., of Columbus, Ohio, reports a noticeable increase in business in drain tile, back up tile and both face and common brick. This is especially marked during the past month and it is taken as an indication that the improvement will continue for some time. The Franklin Brick & Tile Co. recently closed contracts for the sale of a half dozen jobs ranging from 200,000 to 500,000 brick and one job of 1,500,000 has also been closed.

Foresees Marked Improvement In Building

Charles Harrison, of the Gaddis-Harrison Brick Co., of Columbus, Ohio, is one of the agents in central Ohio territory who is optimistic of the future. He reports a better feeling in building circles with indications for a marked improvement in the spring. Mr. Harrison is of the opinion that the worst of the slump is over and that trade will improve gradually from this time on. There are many indications to produce that viewpoint and the trade will show the optimism in the near future.

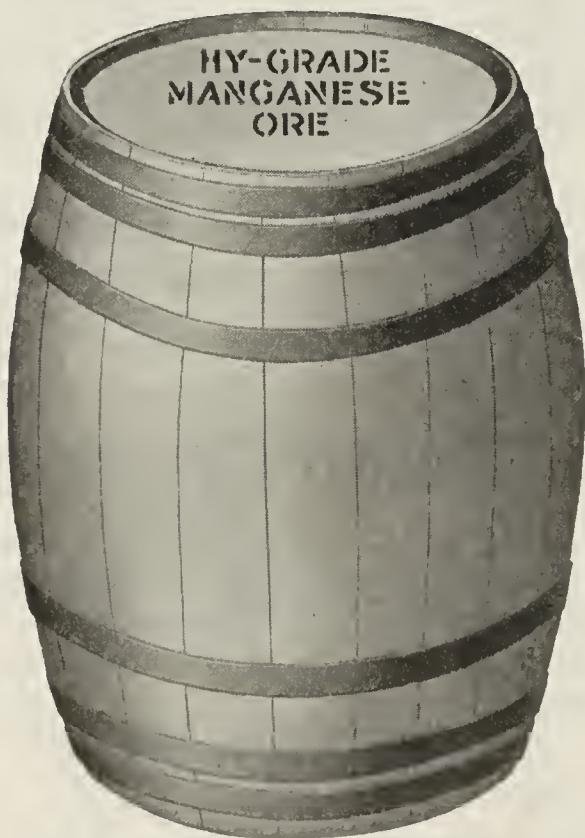
Fire Clay Mining Decreases

Returns for the year made by George F. Miles, chief of the department of labor statistics, filed not long ago, show Athens County, Ohio, has 114 coal mines, 126 industrial establishments and two fire clay mines. Fire clay tonnage during the year totaled 215,863 tons, 24.5 per cent. reduction from the 285,984 tons produced during 1919. The product is principally used in the manufacture of hollow tile and salt glazed brick. Payrolls of stone, clay and glass products during the year amounted to \$266,860, the report said.

Will Rebuild Plant Immediately

Plans for rebuilding the plant and offices of the Duro Brick Manufacturing Co. of Akron, Ohio, which were virtually destroyed by fire recently at a loss of \$75,000, are now being made, it was announced by officials of the company.

Flames starting in the generating plant, fed by gas, spread rapidly to other structures. The molding room and machinery were damaged before firemen gained control of the flames. George James, Cuyahoga Falls, president of the company, said the loss was covered by insurance.



HY-GRADE MANGANESE CO.
WOODSTOCK, VA.

Miner
and
Grinder.

**Especially Prepared
for Brick Making**

Sales Office: CHARLESTON, W. VA.

Parts of Ohio Quiet

The clay industry is very quiet this week in the Parrall-Strasburg (Ohio) field, with only one plant in operation. Keeping pace with orders the Crown plant of the Robinson Clay Products Co. is being operated part time. The pipe shop is working five days and the brick plant of the Crown shop three days a week. The labor at the Crown plant is being paid thirty cents an hour, as in other plants. The National plant at New Philadelphia, Ohio, suspended August 10 for extensive repairs and replacement. An iron trestle is being built. The Royal plant of the Robinson Clay Products Co., of the same district, is manufacturing sewer pipe five and a half days a week, its regular schedule.

Show May Open New Cleveland Auditorium

The building show of the American Building Exposition at Cleveland, Ohio, will be held a week earlier than the tentative dates suggested for this event. The dates as now set will be January 4-14. The change has been made to conform to the automobile show week, which must be held here between the New York and Chicago shows. Altho promises of city officials are that the public hall, where the building show will be held, will be completed by October, it is still more than likely that the building exposition will be the opening event in the auditorium.

Would Build Roads at Any Cost

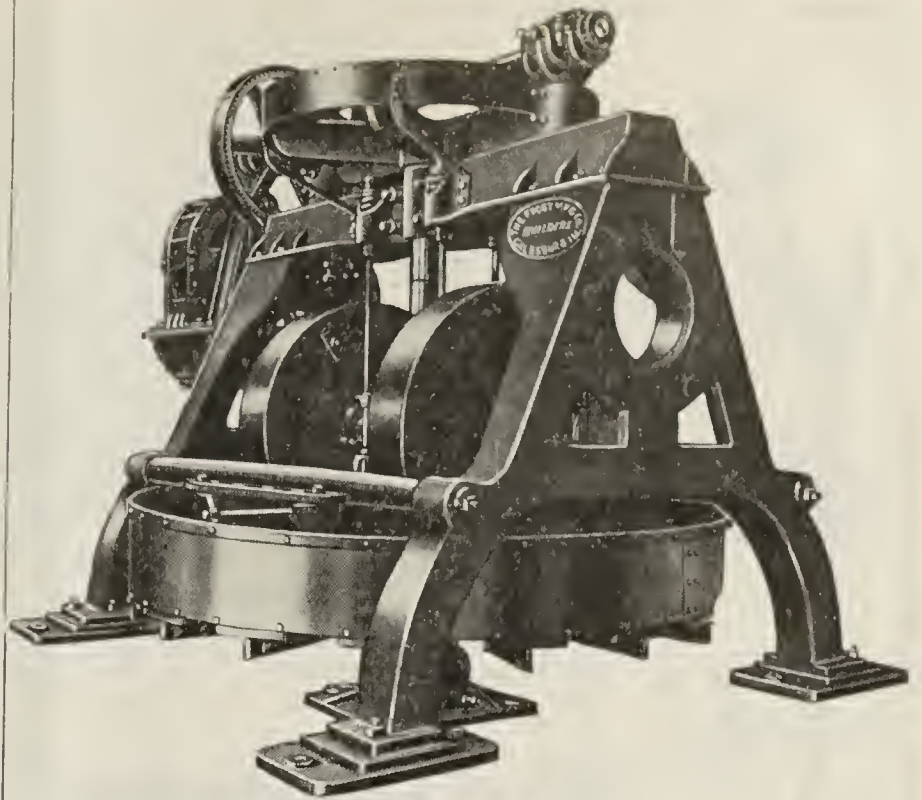
Carroll County, Ohio, apparently cares not what the cost of building a road is. Roads are necessary and they are bound to have them at any price. John W. Gorrell, of Carroll County, chairman of the highways committee of the house of representatives, made the following statement, "A good road at \$60,000 a mile is cheaper than a poor one at \$20,000. What's the difference what the roads cost? We want them, need them and must have them." This is a different attitude from some of the other highway officials who are waging a campaign against the building of roads at present prices.

High Schools Costing Three Million Assured

The final obstacle in the way of carrying out the erection of four large high school buildings for Columbus, Ohio, was removed August 15, when the Columbus Board of Education sold \$2,850,000 bonds to a syndicate represented by Hayden Miller & Co., of Cleveland, Ohio, at a nice premium. The Columbus Sinking Fund Trustees took the remainder of the issue of \$3,000,000. The first of the four high school buildings will be erected on East Broad Street, at Taylor Avenue, after plans by Howell & Thomas, of Cleveland. This building will cost approximately \$1,000,000 and will be 375 by 200 feet, three stories high. It will be of brick, stone and concrete. This building will be ready for figures about January 1.

Big Ohio Merger Announced

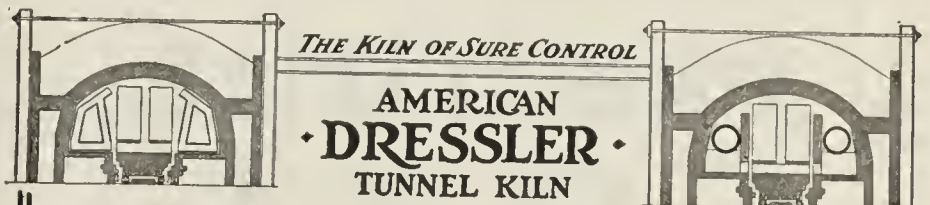
An immense clay and coal merger, capitalized at \$2,250,000, involving eight producing mining properties and at least one clay products company, was recently announced at New Philadelphia, Ohio. The merger will be known as the H. C. Schneider Sewer Pipe Co. It has acquired the business property and assets of the Horger-Heldt Coal Co., of New Philadelphia; the Cleveland Macksburg Coal Co.; the Helen Coal Co.; and the Lakewood Coal & Supply Co. of Cleveland; the marketing organization of W. P. Kaiser; the Goshen Valley Mines and all other coal, clay and shale interests of H. C. Schneider. Officers of the new company are: H. C. Schneider, president; J. U. Horger, vice-president; N. C. Parr, secretary, and A. S. Rippeth, treasurer. The merger is practically



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That Frost Pans aim to give you the best quality of material, workmanship and fabrication that can be obtained.

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THE FROST MFG. CO.
GALESBURG, ILLINOIS.
ESTABLISHED 1851



¶ The sure control of Dressler Kilns eliminates loss due to burning

American Dressler Tunnel Kilns, Inc.
1740 East 12th Street,
Cleveland, Ohio

Why Shovel the Big Pile?



When you can develop
the same amount of heat
at a saving of 34%
by the use of **O'Gara
Harrisburg Coal.**

*Write for "Coal Cost"
of producing steam.
It's worth having.*

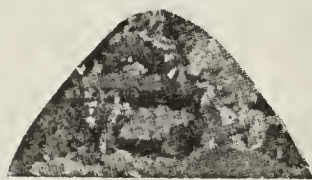
O'Gara Coal Company

Fisher Building
Chicago, Ill.

McKnight Building
Minneapolis, Minn.

521 lbs. "Fair Coal" per
indicated 100 H. P.

343 lbs. O'Gara Harrisburg
Coal per 100 H. P.



PREMIUM COAL

For years PREMIUM Coal
has been first in the minds of
clay plant managers. Repeat
orders have proved their appre-
ciation of this hi-class product.

Conscientious thought on your
fuel requirements eventually
leads to PREMIUM.

*Readily adaptable to any type
furnace in the industries.*

Big Creek Coals, Inc.

Peoples Gas Bldg.
CHICAGO

Minneapolis

Galesburg

a reorganization of the H. C. Schneider Sewer Pipe Co., which has increased its capitalization to \$750,000 of preferred stock and 15,000 shares of no par value common stock.

The combined acquired assets approximate \$1,650,000, and the company by the sale of its preferred stock and a portion of its increased common stock proposes to provide sufficient capital to operate several sewer pipe plants similar to the Schneider plant.

The coal properties will be under the personal supervision of J. U. Horger, and the sewer pipe operations will continue under the supervision of H. C. Schneider. The combined sales and output of the company will be under the supervision and direction of W. P. Kaiser of Cleveland. T. T. Orr, formerly general auditor of the Horger-Held mining interests, will occupy a similar position with the merger.

The company's monthly production of coal is approximately 55,000 tons. In addition to the Horger-Heldt mines, which are among the best in Tuscarawas county, the merger takes over the three new operations of the Cleveland Macksburg Coal Co., consisting of the Peerless Mines No. 1 at Macksburg and Nos. 2 and 3 at Elba, which produce Peerless No. 8 coal and the coal property of the Helen Coal Co., near Cadiz.

The plants of H. C. Schneider Sewer Pipe Co. are located at Goshen, and plans have been perfected to quadruple sewer pipe production which will give the company a seventy-kiln output per month.

General offices of the company will be maintained in New Philadelphia, with sales offices in the Williamson building, Cleveland. The success of the various plants and operations, as well as the personnel of the company, are well known. The merger, on account of the competent and experienced management back of it, assures New Philadelphia of one of the largest operations of its kind in this section of the state.

Adds Building Supply Department

Addition of a building supplies department to its plant which manufactures paving brick is announced this week by the Collinwood Shale Brick & Supply Co., Cleveland, Ohio. The company will feature particularly face brick, lime and cement. It is proposed to cover the entire east end of the county in distribution. This is another step in the plans of the company to have a complete building materials organization in the East End of Cleveland. The company expects to perfect its organization in the next few weeks. H. C. Moatz has been named president of the company, and G. C. Gould, of Gould & Maybach, vice-president. W. H. Crangle has been appointed manager of the building supplies department.

Union Attempts to Force Recognition

The strike at the two plants of the Hisylvania Coal Co., located at Trimble and Gloucester, Ohio, which was called May 8, still continues. The men went out to compel recognition of the union, but the company refused to do so. No efforts are being made at this time to settle the controversy. The plant at Trimble had just been placed in operation, manufacturing building brick while the Gloucester plant had been making pavers for some time. When the men went on a strike the company was paying forty-five cents an hour which was from thirty-five to fifty per cent. higher than other brick plants in that vicinity. J. W. Blower, president of this company, is making a tour of England and will return about September 15.

Cleveland Employers Favor Open Shop

A campaign conducted by the Cleveland (Ohio) Chamber of Commerce Labor Relations Committee, now nearing its end, indicates that a majority of Cleveland employers favor the open shop in the building industry. Questionnaires confirming

this view have come in from contractors, chamber members and manufacturers. According to the committee report 3,749 replies favor the open shop and 224 oppose it, and 3,403 assert they will support the plan in future building operations, if it is adopted, while 187 say they will not. The committee takes the opportunity to score once more the Building Trades Employers' Association for failing to adopt the open shop plan recommended by the chamber during the building strike here last May.

Burn First Brick in New Kiln

The first brick from the new, continuous gas-fired kiln at the No. 2 plant of the Alliance (Ohio) Brick Co. was taken out recently. It has a deep, dark cherry red color, clean burned and free from discoloration of any kind.

This brick fulfills the promise of the Ceramic Engineering Co., of Columbus, Ohio, who designed and superintended the construction of this producer gas-fired, continuous kiln. This method of burning not only produces very superior ware as to color, cleanliness and perfection of burn, but it burns brick with less than half the coal consumption of the ordinary old styled round or rectangular down-draft kiln.

The new plant of the Alliance Brick Co., on Mahoning Street, has been practically completed. Sixty men are employed.

Expect Hollow Brick to Increase Sales

Distribution of the new type of hollow ware and brick, manufactured by the Goff-Kirby Coal Co., of Cleveland, Ohio, was made about the middle of August. The brick is the same size as the average common brick, but has two air spaces, which make it light, sound deadening and an insulation against heat and cold. A big field for these brick is seen by A. O. Preyer, head of the building supplies department of the Goff-Kirby Co., inasmuch as the bricklayer unconsciously lays more of this material than the regulation common brick or tile.

Together with the regulation back up tile and all sizes of partition tile, the brick are being made at the old Ohio Clay Co. plant on Warner Road, the Goff-Kirby Co. taking all the production, and shipping by truck to all parts of the county. George Denison is in charge of production.

Finds Business Fairly Good

"There has been no cessation of activities at any plant of the Robinson Clay Products Co. during the period of industrial depression from which this district is slowly emerging," said H. W. Morgan, sales manager of this concern which is located at Akron, Ohio.

"Our concern has done exceptionally well in the face of present day conditions and we have managed to obtain a fair volume of business," he said. "Officials of the company regard business in the past as being satisfactory and in all probability our plants will continue to operate at the same capacity or even better later on," Morgan said.

"Inquiries are coming more frequently and every indication points to an improvement in the brick and sewer pipe industry." Locally Akron is better from an industrial standpoint and rubber factories every day are employing hundreds of men, but as yet the resumption of the industry has not been reflected in business to any great extent.

The Robinson Clay Products Co. claims to be one of the largest concerns of its kind in the middle west. Its leading products are fire brick and sewer pipe.

Publish Fireplace Designs

Bringing the famous product "Tapestry" brick into other than building fields is the purpose of Fiske & Co., Watson-

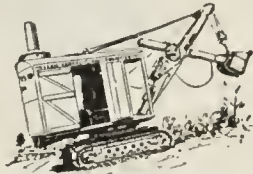


"WITH ONE MAN and one ERIE Shovel, we easily get out 300 cu. yds. per day. This is sufficient to take care of the daily output, at each of our 3 plants but we could easily increase this output if necessary. In our opinion, the ERIE is the shovel."—Edw. T. Conley, Sec'y, Bradford Brick and Tile Co., Bradford, Pa. (Owners of 3 ERIES.)

For larger output than the above—500 to 600 cu. yds. per day, or more—it is advisable to use two men on the shovel. But when your plant requirements are not too great, an ERIE and one man will serve, and save you considerable money in labor cost.

We will be glad to send you data showing just what you can do with the ERIE. Write us.

BALL ENGINE CO., Erie, Pa., U. S. A.
Builders of ERIE Steam Shovels and Locomotive Cranes

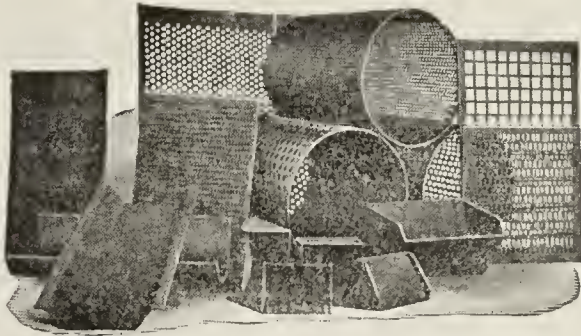


ERIE Shovels can be had with broad tired traction wheels, standard gauge car wheels, or on the ERIE caterpillar type mounting. All interchangeable on the same truck frame.

ERIE Revolving Shovels



HENDRICK SCREENS
FOR ALL PURPOSES



ELEVATOR BUCKETS
CONVEYOR TROUGH and FLIGHTS
STACKS, TANKS,
GENERAL SHEET and
LIGHT STRUCTURAL WORK

Ask for your copy of the
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"Wherever It Is—It's Hot"

EQUATOR COAL

FOURTH VEIN OR HARRISBURG



This coal is superior for burning clay products. It enables the clay plant owner to burn his ware at a much lower cost. Our service is the best to be had and the price is right.

Let us send you information

The
**FARLEY HOPKINS
COMPANY**
Fisher Bldg.  CHICAGO

—COKAL— HAND STOKERS

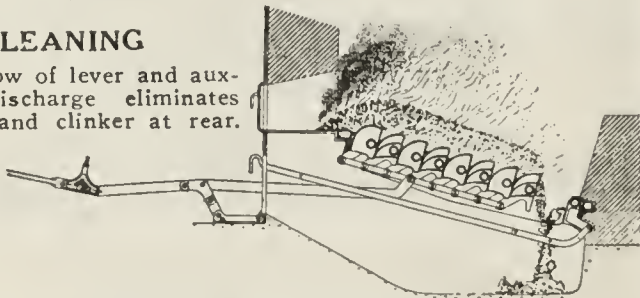
**Make Easy Work of Firing
and Insure Economical Results**

JUNCTION CITY SEWER PIPE CO.
F. BRINGARDNER, Secretary

"We have three CoKal Stokers under three 150 H.P. Brownell Boilers. They are the best thing we have struck. You can move your fire easily or dump it completely with a simple stroke of the lever. Our fireman keeps more steam and does it easier than before, and we get more heat units from the coal. Any six year old boy can dump the ashes from our boilers without effort."

CLEANING

Full throw of lever and auxiliary discharge eliminates all ash and clinker at rear.



Write us about them

For Boilers or Kilns

—COKAL STOKER CORPORATION—

1037 NORTH CLARK STREET, CHICAGO

town, Pa., in publishing the beautiful book on fireplaces built of "Tapestry" brick. The book contains nineteen designs for fireplaces, all well thought out and tastefully illustrated. The illustrations show not merely the construction of the fireplace but in many cases show the entire section of the room in which the hearth is built, completely furnished to show how the hearth design harmonizes with the rest of the surroundings.

The design of beautiful fireplaces is a considerable art and Fiske & Co. in their new book seem to have reached a very high degree of perfection in it.

Demand for Brick and Tile Increases

More inquiries for brick and hollow building tile have been received by manufacturers in Philadelphia, Pa., recently than for some time previous. Some fairly large construction jobs have supplied producers with a considerable volume of business. It is believed that many operations will be held over until next spring, however, owing to the fact that the building season is so far advanced. Face brick prices seem to be holding firm with red face brick at about \$35 per thousand and buffs bringing approximately \$40.

Active Construction on Brick Plant

The American Clay Products Co. is progressing rapidly in the construction of its new plant at New Hope, Pa., and it is proposed to place the works in operation at the earliest possible date. The building of the kilns will be started at once and over 1,500,000 brick have been purchased and are now on the site for different parts of this work. The company has completed the construction of a siding from the Philadelphia & Reading Railroad, and the line is being used for the delivery of materials and equipment for construction. The yard will be equipped for the manufacture of vitrified brick, and the initial output will total more than 150,000 per day. The company has acquired about 1,000 acres of clay properties in this section, and will install a modern clay mining and haulage system connecting with the main works.

Planning Erection of Plant

The Cisco (Tex.) Clay & Coal Co., has plans under way for the erection of a new local plant for the manufacture of brick, tile and kindred burned clay products, including paving brick production. C. B. Bush is president.

New Plant Begins Shipping Paving Brick

The new plant of the Mineral Wells (Tex.) Paving Brick Co., has begun to ship paving brick. This plant is not as yet completed but has begun work with the finishing of the first unit. The completed unit is modern in every way and has been built at an approximate cost, it is said, of \$500,000. It is stated that the entire plant, when completed, will be the largest of its kind in the South.

Texas to Have New Plant

The Hercules Brick Co., Dallas, Tex., recently organized, has plans under way for the erection of a new plant on the Trinity River, near Dallas, where a tract of property totaling sixteen acres has been acquired. The land is rich in blue shale, extending to a depth of sixty feet at some points. The new plant will have an initial capacity of about 150,000 brick a day and is estimated to cost about \$75,000. A. B. Saling is general manager in charge.

Large Office Building in Prospect

J. J. Bishop, of the Memphis (Tenn.) Brick Supply Co. Goodwyn Institute, said: "Activities have been a little quiet

in the summer, this section not getting over the lassitude of the last half of 1920, but autumn prospects are favorable. Much work is under plan, and residential work, school work and some business construction has started up in July. August will doubtless show a further improvement, and we look for September and October to be somewhat like old times. Many of the residences are of the bungalow type, but using fancy brick and terra cotta. There is a new building at the Fair grounds, in which some brick are being used, and there are a number of new schools for the city of Memphis under contract in which brick is a leading item. There is some talk of a new 22-story office building in Memphis. It is said the Tri-State Hotel project will take form in September. Facing brick are in very good demand now, being used in residence and apartment house construction."

Now Making Hollow Building Tile

Hollow building tile are now being manufactured by the Marshfield (Wis.) Brick Co., and the first kiln of this ware has been turned out. President Louis Hartl, of the company, states that the brick turned out at the Marshfield plant have withstood very severe tests and that the clay is of very high quality.

Acme Brick Co. Publishes Attractive Folder

An attractive folder setting forth the merits and qualifications of its brick is being distributed by the Acme Brick Co., of Milwaukee, Wis. "Acme Brick" have been used in many large industrial buildings such as the Federal Rubber Co. plant, the Kissel Motor Car Co.'s buildings and a number of others. These are illustrated in the folder. It is claimed that in tests of different kinds of brick made by the University of Wisconsin, Marquette University and the Milwaukee Electric Railway and Light Co., Acme brick have been found higher in compressive strength and lower in moisture absorption.

Builds New Kiln

A new kiln has been built and is now in operation at the plant of the Sheridan (Wyo.) Press Brick & Tile Co. It is a down draft kiln with a capacity of 70,000 brick. The plant is running at capacity which is about 35,000 daily. Approximately half the output is going into stock and the company has sufficient brick on hand to meet all demands. C. F. Kneisel, president, is optimistic concerning the outlook for the future and is putting the plant in readiness for coming business.

Exploring Northern Saskatchewan

The Bureau of Labor and Industries of the Saskatchewan government is sending a party into the little known North country near Lac La Rouge, to study the clay, coal, iron and other minerals of that highly mineralized belt. The distinction of being the representative of the Bureau and the University of Saskatchewan, as ceramist and geologist, has been accorded to W. G. Worcester, professor of ceramics at the University of Saskatchewan. The expedition will remain in the northern country until the freezing weather drives them back, which will be some time from October 15 to November 1.

Quebec Plant Working Full Time

In these days of curtailed production and general inactivity it is good to hear of a plant which is really busy. A representative of *Brick and Clay Record* found the Citadel Brick & Paving Block Co., Ltd., Quebec, Can., working eight hours a day and every day. P. A. Galarneau, manager, stated that operations



UNION FUEL COMPANY

A COMPANY WITH DEFINITE IDEALS

Coal that is high in heat producing capacity, and low in ash.

GENERAL OFFICES: Union Fuel Bldg., Chicago. OPERATING OFFICES: Reisch Bldg., Springfield, Ill.
L. J. PULLIAM, President. G. W. HATCH, Gen. Sales Mgr.
ANDREW STEVENSON, V.-P. H. E. SMITH, General Supt.
A. E. LEE, General Sales Mgr. L. S. SHORT, Purchasing Agt.
B. F. BLISS, Auditor.

Mines owned and operated by the company are located at—

No. 1 Nilwood, I.L. No. 3 Auburn, Ill. No. 5 Selbytown, Ill.
No. 2 Keys, Ill. (Tuxhorn) No. 4 Athens, Ill. No. 6 Girard, Ill.

Kiln Banding

Our Specialty

Located in the heart of Ohio's clay products territory, we are ready to give you prompt and efficient service based on years of experience, on short notice.

Manufacturers of

Coal and Clay Cars

that give perfect satisfaction, because they are built right—of the best material.

Oxy-Acetylene Cutting and Welding

GALLAGHER BROTHERS

Long Dist. Bell Phone 193

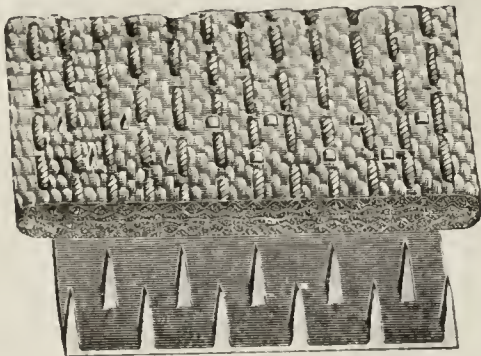
UHRICHSVILLE, OHIO

OVER **\$1000** SAVED

by using the

Talcott Clinching Belt Hooks

They
Reduce
the
Breakage
of
Belts



They
Make
the
Belts
Last
Longer

A Superior Fastener for All Kinds of Fabric Belting

Used for 30 YEARS in the leading Brick Works Cement Works, etc., on HEAVY DRIVES and CONVEYOR BELTS.

SEND FOR FREE SAMPLES AND TRY THEM

W. O. & M. W. Talcott, Inc.

PROVIDENCE, R. I.

TALCOTT STANDS FOR QUALITY

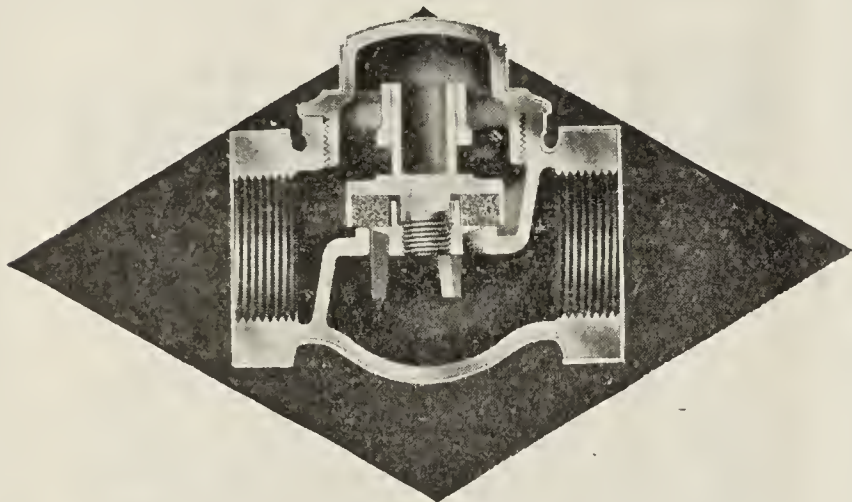


Figure 117

Jenkins Brass Horizontal Check Valve Screwed, standard pattern, for 150 pounds working pressure. Also made flanged. Fitted with Jenkins Disc which gives valve practically unlimited life. Know genuine Jenkins Valves by the Jenkins Diamond Mark.

At all supply houses



JENKINS BROS.

New York Boston Philadelphia Chicago
Montreal London Havana
FACTORIES: Bridgeport, Conn.;
Elizabeth, N. J.; Montreal, Canada.

Jenkins Valves
SINCE 1864 2336-J

will be continued thruout the winter. This is remarkable as the winters in Quebec are extremely severe.

Scow, Conveyor and Truck Deliver Brick

The accompanying views illustrate the interesting marketing and shipping methods used by a prominent Virginia plant. The system of distribution is unusual in that nearly all shipments are made by water. The plant has no rail connection.

J. C. Robinson, treasurer of this concern, which is known as the Clay Products Corporation, Hampton, Va. writes:

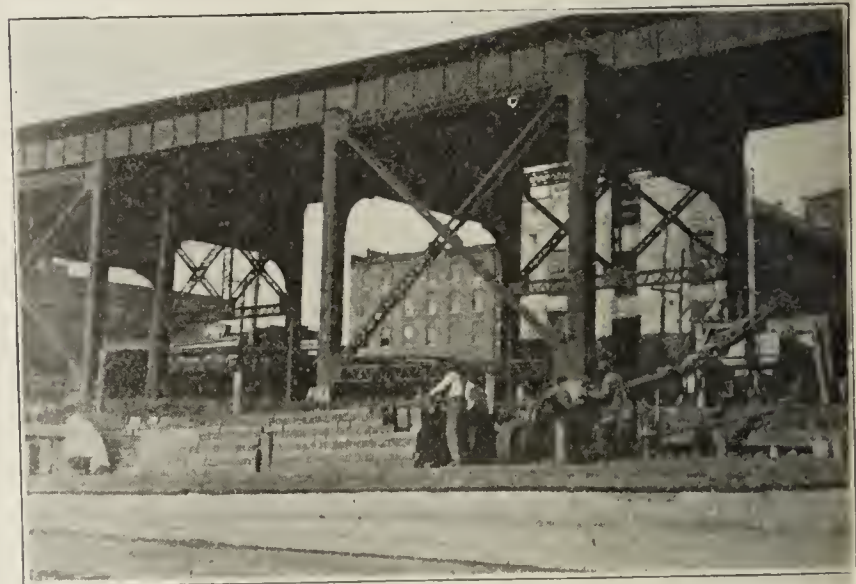
"We have four scows, each with a capacity of 85,000 to 140,000 brick. At the kiln we load motor trucks by wheelbarrows, and the superintendent does not think that the belt conveyor



Motor Truck Hauling Brick from Kilns to Scow. The Clay Products Corporation of Hampton, Va.. Uses This Method of Transportation.

can beat that on this end. The unloading is done by a belt conveyor when the pull is up hill from the scows, which is usually the case. However, there are some places where we use the gravity roller conveyor, which is preferable where it can be used.

"It takes two to three days to load a scow and about the same time to unload. Our best record is 140,000 brick delivered on the job with the use of four trucks in two days.



Unloading 140,000 Brick from Scow onto Truck. The Scow Carries the Brick a Distance of Sixty Miles.

These 140,000 brick were delivered by scow from our factory to the city, a distance of 60 miles and then hauled one mile by motor truck to the job.

"It took six men to do the unloading, five at \$4, and one at \$5, making a total of \$50 for labor. To this must be added \$5 for oil and the expense of operating the conveyor, which makes the total cost \$55. The trucks should be figured at \$25 a day, since it is this rate at which they are hired. Thus, the total

expense for the entire delivery, excepting for the freight cost hauling by scow, which is \$3 a thousand, is at the rate of \$1.82 per thousand.

"The greatest distance that we have delivered brick by truck is about five miles and by contract the trucks have received \$5 per thousand for hauling."

The conveyor is operated by a type Z, 1½ horse power Fairbanks-Morse engine, which burns either gasoline or kerosene. The conveyor is home made and perhaps only cost \$300. This method of delivering clay products as outlined by Mr. Robinson, may be possible of adoption by other clay plants. The saving by hiring the truck by the day over the price per thousand delivered, is quite worthy of consideration.

This Never Happened to Brick Paving

Following a heavy rain, which was in the nature of a small cloudburst on August 11, a Louisville, Ky., newspaper had the following item:

"Considerable damage was done to the wooden block pavement at the southwest corner of Sixth and Jefferson Streets by water yesterday, which gathered as a result of the heavy rain at noon and which the sewer was unable to carry off. The pavement was lifted several feet from its foundation and a policeman had to be stationed at the corner, warning drivers of all vehicles not to drive over the damaged section until after the paving had dropped to its normal position."

* * *

Building Situation in the East

(Continued from page 279)

seem quite possible when initial burnings were under way early in the spring.

PHILADELPHIA CONSTRUCTION IMPROVES

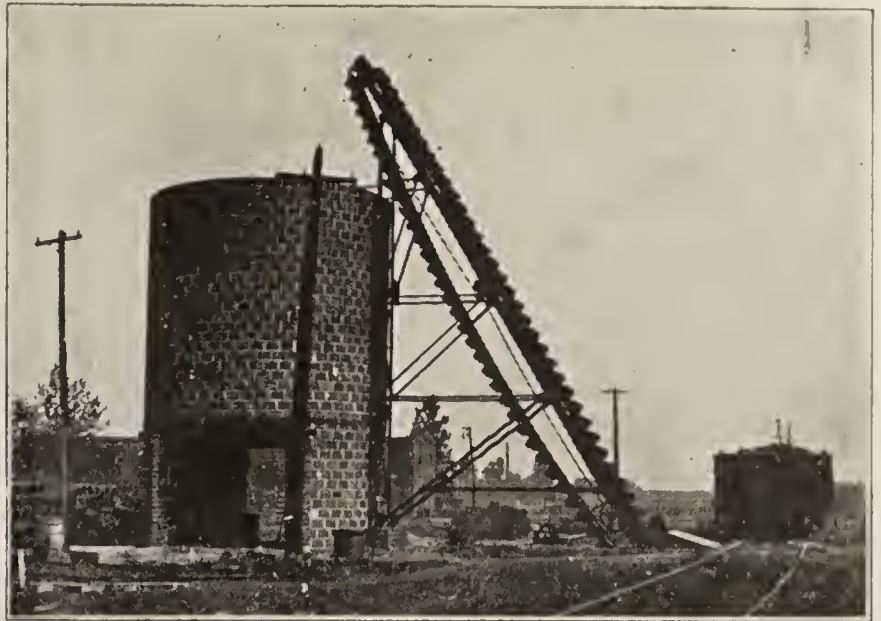
There is a growing demand for brick and hollow tile at Philadelphia, and manufacturers and dealers view the situation with a feeling of encouragement. Local brick producers are maintaining operations at their yards at a fair capacity, and while there is no inclination to let reserves pile too high, there is no hesitancy in proceeding with production to meet all anticipated advance demands. Face brick is taking a turn for the better and calls are growing more numerous.

Common brick has settled into the \$20 level with firm stability, and it is not likely that there will be any change for some time to come. Red face brick is quoted locally at \$35 a thousand, while a good grade of buff material is now procurable around \$40. Other face brick, including rough textures, is selling at \$48 and \$50 figures. Fire brick is being held at \$70 and \$75 a thousand, with some material, coming from Trenton, selling for as high as \$80. Burned clay specialties, such as wall coping, drain tile, etc., are operating under a rather slow demand.

BALTIMORE OPERATIONS SLOW

It is estimated that over \$5,000,000 in construction work is being held up at Baltimore in anticipation of lower building costs and better business conditions. The bulk of this work is of public nature, including also a number of apartment houses. Employees in the local construction industry have recently accepted a ten per cent. wage cut, but this is not expected to bring any great revival at the moment.

Building materials have not shown any great decline in the Baltimore district for a number of weeks past. Common brick is being sold at from \$23 to \$25 a thousand, with out-of-town production bringing a still higher figure. Face brick varies from \$40 to \$55, delivered, and fire brick from \$70 to \$80, according to selection.



55 Tons of Lump Coal Unloaded In 50 Minutes

That is what a Sunbury Automatic Car Unloader does in filling a coal bin for the Krick-Tyndall Co., Manufacturers of Tile and Blocks, Decatur, Ind.

Think what it means to unload a car of coal, this day of car shortages and labor scarcity, in approximately one hour. It's real ECONOMY as well as co-operation in solving the great railroad difficulties.

The SUNBURY UNLOADERS are now used by hundreds of industrial concerns unloading coal, gravel, stone, sand, etc., paying for themselves in a short time in the saving of time and labor.

Tell us your requirements and we will send you complete information including prices and specifications.

THE SUNBURY MANUFACTURING CO.
Sunbury, Ohio

Brick and Clay Drying with Speed and Economy

"Garden City" Steel Plate Fans

installed in many Brick and Clay Plants throughout the country have established a reputation of durability and low cost of operation.

**Waste Heat Fans
Cycloidal Multivane Fans**

**What Is Your Problem?
We can solve it!**



Our catalog
No. 21 will interest you.

Write us today

Garden City Fan Co.

Manufacturers

Established 1879

**McCormick Building
Chicago, Ill.**

A WOMAN'S DREAM of a HOME

ONE of the prize winning stories submitted in the recent essay contest held by the American Face Brick Association contains good advertising suggestions. The subject of the article is "A Trip to My Dream Home" and it would probably not be too much to say that most women who do not own their home carry with them a mental picture of their ideal of a home. Of course it is the brick manufacturer's problem to have this home built of his product.

A TRIP TO MY DREAM HOME

"I leaned back comfortably in the big spring cushioned chair. How cozy I felt. The fragrance of the honeysuckle came thru the open window. Deeper and deeper around me it grew until I seemed enveloped in a haze of deep, rich perfume. Like a cloud it lifted me from my chair and I went floating away. How delightful it was to have the wind blow gently against my face and thru my hair. The slow rocking movement of my perfumed chariot soothed my tired nerves.

"Over the edge of my fragrant cloud I could see the smoke of the dirty city. Slowly we glided, rocking gently to and fro, above the factories and tall smoke stacks. On we went past the closely built up tenements and out above the winding boulevards. The huge hotels with their ornate architecture and the large apartment buildings standing stiff and straight like a regiment at attention appeared below in a long row. I closed my eyes and breathed deeply as my cloud swayed slowly past. Surely it now seemed we were slowly descending. I opened my eyes and peered over the side. A beautiful view met my eyes. No more smoke stacks or closely built buildings but the greenest of green grass and many colored flowers and peeping out from among the tree tops here and there were the roofs of houses, small houses.

IN A BEAUTIFUL GARDEN

"We floated gently down and I found myself standing in the center of a garden and my chariot of honeysuckle perfume slowly diffused and mingled with the other perfumes of the garden. In the center of the garden was a pool, with many gold fish and several pretty white ducks who did not seem disturbed by my presence. To one side was a sun dial and a bird bath and little bird houses of bright colors were perched on top of poles. Over the garden walls of brick climbed flowering vines.

"I followed the winding path of ornamental red brick thru the garden, stopping here and there to touch a beautiful flower which reached its head out as if begging for me to caress it.

"The brick path led me to a little home which had been hidden by the flowering bushes and tall trees. I hesitated and stepped back. How guilty I felt to be intruding on someone's beautiful grounds.

"To be polite I must explain my presence in the garden. Timidly I approached the house which set very close to the ground as if it loved to be near the flowers and grass. The brick with the wide bands of white mortar and the snow white shutters and sills were most attractive. How beautiful it was and yet how substantial. On one side was a glazed sun porch and on the other the roof sheltered the drive way. Rambling roses climbed over the white trellis.

THE DREAM HOME

"Coming from the garden path I approached the rear of the house. The windows were open upstairs and I could see the dainty ruffled curtains blowing gently with the breeze. The path led up to a brick porch and I lifted the brass knocker. There was no response. Glancing down

at the nameplate, to my surprise I beheld my own name. My heart beat fast. What could this mean? I lifted the knocker again but no response. Fearfully I tried the door. It swung open and I stepped into the entry hall. My woman's love of a home made me forgetful of my fears. Each piece of furniture I touched to be sure it was real and my heart beat fast with anticipation. Into the dining room I hurried. It was also large and had many windows and a very cheerful little reading nook in the corner. The kitchen was spotless. The blue and white pans like the blue and white checked curtains harmonized with the same color on the walls. The sun streaming in the windows made this room a most delightful place to work in. The pantry shelves, well filled, made me wish it was time to start preparing a meal.

"But first I must go upstairs. I would run up the back way as these stairs would be the ones most used. Of course I would do my own work. Such a beautiful house should not be intrusted to a maid. How I would delight in keeping things pretty.

"Oh, how wonderful, I exclaimed out loud when I saw the first bedroom. It was at the back of the house and overlooked the garden thru the trees. How restful this would be for Tom when he returned after a hard day's work in the city. Dear Tom, how hard he had worked since we were married so we could have a home some day. How I loved him. The bedroom in front would be the guest room. It was large and airy. A peep into the bathroom showed snow white porcelain and shiny fixtures.

A DREAM TO BE REALIZED SOME DAY

"I paused before the last door and listened. I caught my breath and listened again. Could it be possible? No—no—my ears must deceive me. I opened the door and entered. Yes, it was a nursery. Everything was white and dainty. The crib was across the room and beside it, smiling and holding out her hand to me, was my Mother. I stood motionless.

"'Come, dear.' Yes, it was Mother's voice.

"Mother, I knew you would come back. You were too wonderful to die. My voice choked and I ran across the room and knelt by the cradle. The tiny baby looked up and smiled.

"'Yes, dear,' I heard Mother's voice, 'it's little Tom, and I have been taking care of him until you came to live in your own home and care for him yourself.'

"When I lifted my head I found myself in the big spring cushion chair. The fragrance of the honeysuckle still came in thru the window. I looked around my small living room and rather dazed rose and walked thru the little apartment. The clock said six. Tom would be home for dinner at seven so I must hurry.

"Some day we will have a real true home of our own and maybe there will be a little Tom. Of course Mother can never come back from the echoless shore but she will smile down on us from Heaven.

"Yes, I am glad I planted that honeysuckle vine beneath the window."

✽ ✽ ✽

Competition is a good thing; it makes us just a little more polite than we would be if we had things all our own way.—
"Good Hardware."

✽ ✽ ✽

"Just because you have a good opinion of yourself is no reason why you should have a poor opinion of others."

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

American No. 384 Dry Pan

The new No. 384 American Dry Grinder is designed to save power, to save screen plates and to do more grinding. On the ordinary pan the screen plates are work cut more or less rapidly, depending on the nature of the material ground and the usage the pan gets. The ordinary pan also required a lot of extra power because of the friction caused by the drag of the scrapers on the pan and material.

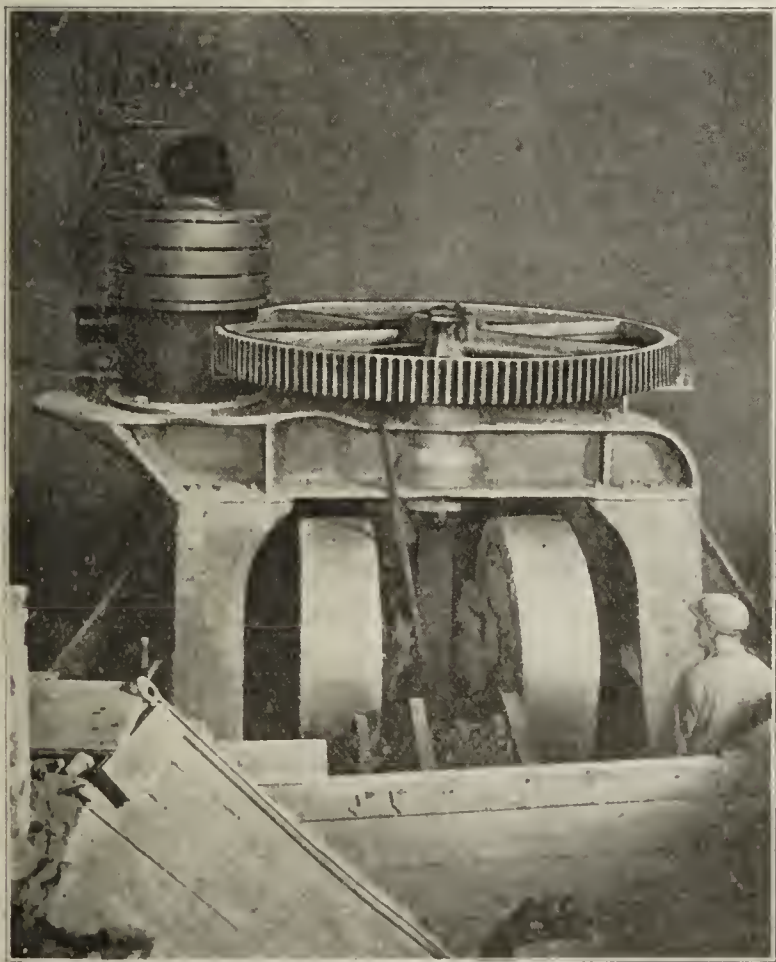
The Hadfield-Penfield Steel Co. have provided the means of saving this wear and tear and excessive use of power by dispensing entirely with its cause. In other words their No. 384 Grinder has no screen plates and does not do any screening.

It is operated at high speed and grinds rapidly with a large saving in wear and tear and with a minimum of power consumption. It will be built in two sizes, one size is ready at the present time.

The pan runs at 50 rev. per minute and the mullers are 60 inches diameter by 16 inches face. By comparing the sizes of mullers and speeds some idea of the immense grinding capacity may be had.

Theoretically a muller 60x16, weighing around 12,000 pounds and running at the same speed as a standard 48x10 muller weighing around 5,000 pounds, should grind approximately two and one-half times as much; and when running at twice the speed as is the case with this new grinder, the output would be five times that of a standard 9-foot dry pan.

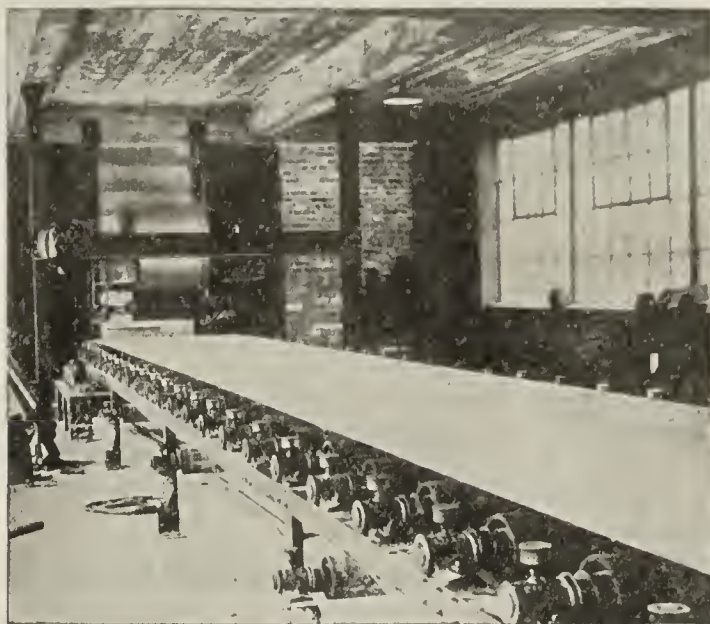
The manufacturers feel they have reason to believe this will work out in practice as about 9 years ago they installed a similar grinder somewhat smaller in size at Boynton, Okla. This grinder has been in operation regularly ever since and has shown a very high capacity with a minimum of wear and tear and very low power consumption. The No. 384 Grinder is designed to take the place of four to six pans and may be driven by means of a belt in the usual way or may



No. 384 Pan Installed at Bradford (Pa.) Press Brick Co. Plant

BURN MORE BRICK

TO MEET THE DEMAND THAT IS SURE TO
COME EQUIP YOUR PLANT WITH WELLER
MADE MACHINERY TO HANDLE THE RAW
MATERIALS AND FINISHED PRODUCTS
MECHANICALLY. OUR ENGINEERS ARE AT
YOUR SERVICE TO ASSIST IN THE SELEC-
TION OF EQUIPMENT TO MEET YOUR RE-
QUIREMENTS.



We Design and Make

APRON CONVEYORS

BELT CONVEYORS

BUCKET CONVEYORS

DRAG CONVEYORS

PAN CONVEYORS

SPIRAL CONVEYORS

BUCKET ELEVATORS

ELEVATOR BUCKETS

DUMP CARS

TRUCK DUMPS

STEEL HOPPERS

WELLER-MADE STEEL CHAIN

COMBINATION MALLEABLE and STEEL CHAIN

PULLEYS—HANGERS

FRICTION CLUTCHES

COLLAR OILING BEARINGS

COAL AND ASHES HANDLING EQUIPMENT

OIL BURNERS

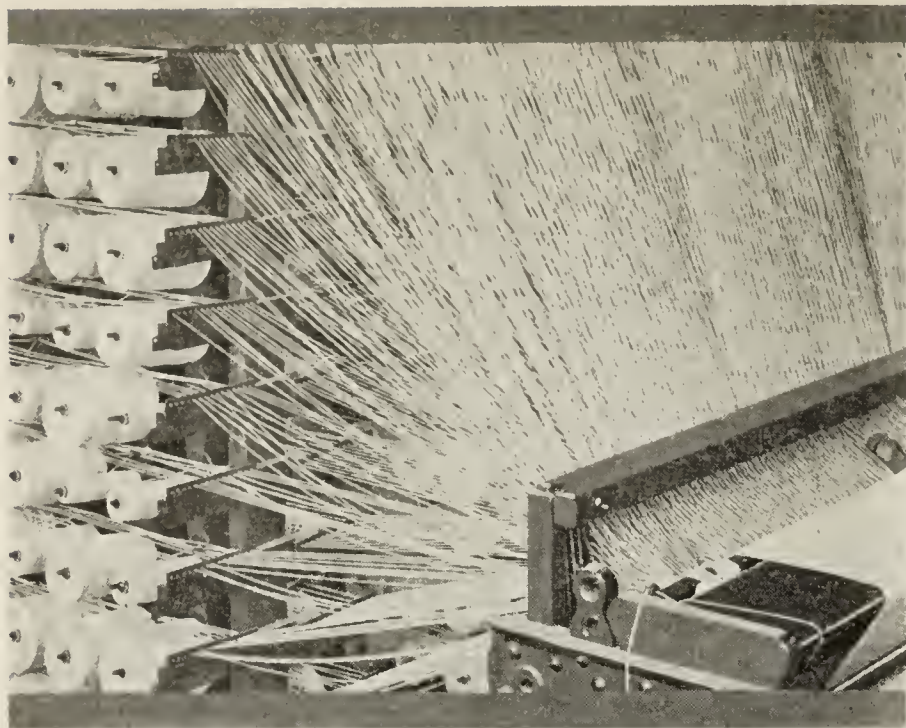
WRITE FOR PRICES

WELLER MFG. CO.
CHICAGO

New York
Boston
Baltimore



Pittsburgh
Salt Lake City
San Francisco



Gandy Standard Starts with the Yarn

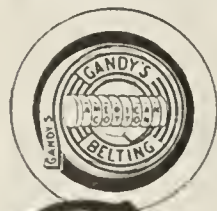
The high standard of quality that is built into a Gandy Stitched Cotton Belt has its beginning in the first steps of its manufacture.

The yarn—a belt's very basis of strength and durability—is made of the best long fibre cotton, carefully selected, properly twisted, and woven into the Gandy process insuring maximum service and long belt life.

Gandy belting—the original stitched cotton duck belt—has been the world's standard since 1880 for power transmission and for conveying. The thorough service, the long wearing qualities and the genuine satisfaction a Gandy belt gives have come to be accepted by brick plants and allied industries as natural characteristics of this superior belt.

Equip with Gandy Belting. There is only one Gandy. Look for the green edge, the Gandy name, and the Gandy trade mark.

THE GANDY BELTING CO.



MAIN OFFICE AND FACTORY
732 W. PRATT ST. - BALTIMORE, MD.

NEW YORK: 36 WARREN STREET
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GANDY

STITCHED COTTON DUCK

BELT

be geared direct to a vertical motor located on the cross frame of the machine. All bearings are self oiling and facilities for filling oil reservoirs are such that any bearing may be supplied with oil while the machine is running or when it is idle.

The height of the oil in the reservoir can be seen at all times on the oil gauge so that no oil need be wasted and bearings need not run dry. The step bearing is self aligning and dust is excluded. The vertical bearing in the upper cross frame is packed so as to prevent leakage of oil.

Gears are completely covered and for the bevel geared belt driven Machine the pinion runs in a bath of oil. This Grinder requires a minimum of floor space and reduces the number of feeders, elevators, and screens.—*American Clay Magazine.*

✕ ✕ ✕

Price Reduction

Link-Belt Company announces a practically uniform reduction of 10 per cent on malleable iron and steel ("SS Class") Chains, Sprockets, Buckets, and other products, effective at once. Discounts on application.

✕ ✕ ✕

Small Cities Prefer Apartments to Houses

The small cities of the United States are gradually abandoning the old-fashioned American home for the modern apartment house.

This fact was revealed in a report on building operations in this country in 1920 issued today by the Civic Development Department of the Chamber of Commerce of the United States. This report, which was compiled by the National Chamber in conjunction with the Federal Bureau of Labor Statistics, is one of the most complete of its kind ever prepared, and contains definite data on the amount of building construction carried on in the United States last year.

The building figures show that in 1920, seventy per cent. of the families provided for got one-family dwellings; eleven per cent. two-family dwellings and nineteen per cent. apartments in a multi-family dwelling. According to the report, the figures also indicate that the proportion of multi-family dwellings that were provided last year was largest in the small cities which have not had as much experience with this type of habitation as the larger cities. At the same time the report shows that there was more house building in proportion to population in the smaller than in the larger cities. The new accommodations—house or apartment—provided in cities of 25,000 to 100,000 population was one for every 258 inhabitants while in cities of more than a million population it was one for every 591 inhabitants, and the average for all the cities listed was one for every 350 inhabitants.

A blank soliciting the required building information was sent out to the 288 cities in the country having a population of 25,000 or over. Their total population was nearly thirty-eight million. Of these, 131 cities, with a population of 81.5 per cent. of the total, reported.

"It is interesting to note," says the report "that of the estimated one billion, forty-three million dollars spent on buildings in 1920 in the cities reporting, more than thirty-six per cent. (\$382,307,000) was devoted to dwellings. Factories and work shops came second with 16.8 per cent.; stores and mercantile buildings third, with 13.3 per cent.; while office buildings and garages tied for fourth place with 8.2 per cent. each. Schools, hospitals and charitable buildings together called for 5.4 per cent. or \$77,388,000. Amusement places cost more than churches, hospitals or public buildings, the sum being \$38,637,000.

"If the rate of building in the non-reporting cities was the same as in those which reported, the total number of buildings in all the cities of 25,000 or more population may be estimated at 195,000, at an estimated cost of \$1,280,000,000."

BRICK and CLAY RECORD

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The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups," to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

NORMAL PRODUCTION HAS NOT BEEN REACHED

A GAIN the clay products industry shows a gain in both quantity and value of output for 1920 as shown in the preliminary report of the U. S. Geological survey which was issued just recently. Despite the gains made during the years 1919 and 1920 we are not so elated as we would be were it not for the existence of certain conditions that hold back our enthusiasm.

The gains made immediately following the war were but natural when it is considered that during the war the brick business was throttled by the restrictions imposed upon it by the government. Hence, it was only to be expected that the clay industry should participate in the inflation that was general during this two year interval. However, despite the enormous increases in values of output of the various products, there really have been no real gains made. Production of clay products is not yet back to normal!

These are hard statements to swallow but an examination of statistics will bear them out. Before quoting figures let us state that we believe that despite the fact that a brick manufacturer may be getting \$20 per thousand for his brick this year compared to \$15 per thousand the year before, his profit per thousand may be less. It follows then that the clay products manufacturer is interested chiefly in the quantity production rather than value of output.

Examination shows that the 1920 production of common brick altho greater than for the preceding two years is far below the production of any of the years in the period of 1900 to 1914. Similarly, the production of face brick and paving block is lower than for the prewar period. Fire brick production is somewhat higher than the prewar period and hollow building tile is also a trifle stronger. On the whole, however, with the exception probably of hollow tile, the basic products did not nearly approach their normal production.

While this revelation takes out some of the pep of the recent reports, it on the other hand, is a sign of faith, hope and encouragement to the clay products manufacturer. There is no rea-

son why the production and use of clay products should not reach former figures.

To do this three vital factors must be effected. Educational work thru association advertising, and the distribution of helpful literature will accomplish a great deal. Freight rates must be lowered so that distribution costs are lowered and the products can be sold at prices more attractive to the public. Thirdly, production costs must be lowered in order to place clay ware on a more favorable plane with competitive products.

✻ ✻ ✻

TWO VARIABLES IN CLAY MANUFACTURING—ELIMINATE ONE

EVERY now and then if you can get your fellow clay products manufacturer to open up a bit, you hear some of the most remarkable stories about experience with plant personnel that can be imagined. Nearly every plant manager can tell a story of equal fascination. Moreover, we doubt if any other industry has the same percentage of unusual trials with personnel.

A large hollow building tile manufacturer after completing a model plant spent a long time finding a crew who could man it. Superintendent after superintendent failed to get the production out of it. Men of good reputation and of wide experience were secured, men with a good record of success, in fact, the whole country was scoured for a man who could make the factory go. Finally, after many futile attempts the foreman of the machine room was developed into a superintendent and he has held this position successfully ever since his appointment.

The reason for such experiences which are more common to the clay industry than any other, is because of the nature of the raw material. Clay is as variable as the character of mankind. No two clays are exactly alike. Hence, one cannot expect to get the same results from like treatment. A clay must be considered from its chemical and physical properties, and treated accordingly.

It is because of this situation that superintendents who have been suc-

cessful on some plants, have failed on others. They either do not appreciate the difference in properties of the clay or they lack resourcefulness in handling the manufacture of the clay product.

For this reason it is apparent that when the one variable—man, handles the other variable—clay, all sorts of results can be expected. Hence, if one of the variables can be removed, it should make for less variety in nature of product. Thus wherever mechanical devices can be employed to do the work of man, its installation should be given earnest consideration.

The use of mechanical equipment not only eliminates to a large extent one of the variables but usually reduces cost too, by cutting down the number of men required or by speeding up production.

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THROWING LIGHT ON THE FARMER'S CONDITION

IT IS A RELIEF, after hearing all the depressing reports which have been circulated lately, to learn that the farmer is not so bad off after all. Press statements which have incorporated some of the data given in the crop estimates issued by the government have painted the situation worse than it really is.

A statement issued by the Agricultural Publishers' Association points out that even if the loss of 250 million dollars to the farmers was actual it would mean only one per cent. of the 25 billion dollar annual turnover of the farming business, or would compare with a salary cut from \$100 to \$99.

Clay products manufacturers are interested in this statement from two angles. First, because of the effect on business in general and secondly, because of the fact that the farmer himself is a large purchaser of clay products.

Erroneous reports tend to jeopardize the farmers credit standing. Any restrictions of credit to the farmer would seriously affect his business. Inasmuch as all phases of our complex industrial life depend directly or indirectly upon the basic industry of agriculture, all business is affected. Moreover, agricultural credit has a special

(Continued on page 351.)

1920 CLAY PRODUCTS VALUE REACHES HIGHEST MARK

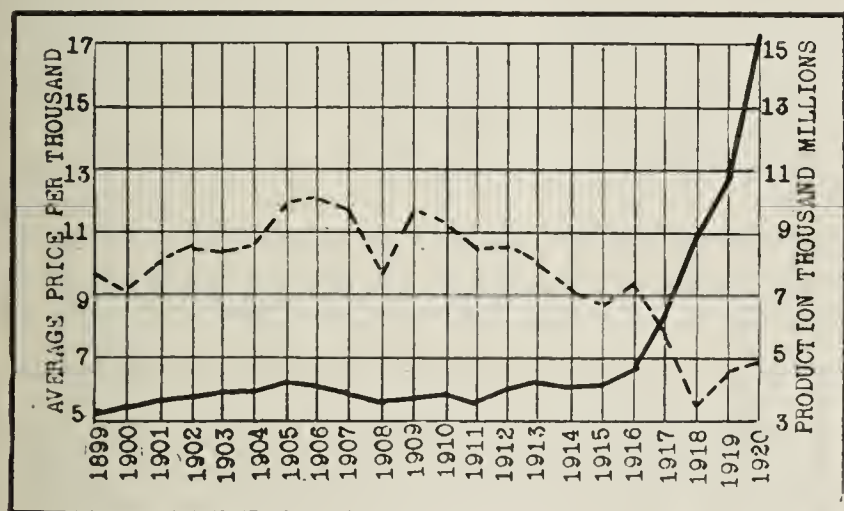
*Common Brick Value Increases 25 Per Cent.—
Face Brick Output Drops Behind Last Year—
Fire Brick Production Increases 20 Per Cent.*

THE VALUE OF CLAY PRODUCTS marketed in the United States in 1920 is estimated by Jefferson Middleton, of the United States Geological Survey, Department of the Interior, at the enormous sum of \$364,220,000, by far the highest recorded value in this or any other country. This amount represents an increase of \$103,430,000 as compared with 1919, about \$143,647,000 as compared with 1918, and of nearly \$200,000,000 as compared with the value of ten years ago.

Increased cost and resulting high selling prices were for the most part responsible for the big gain in value over previous years. The increase in value is not reflected to such a great extent in increased production excepting in the case of fire brick; this item showed a gain of 20 per cent. over 1919. The total of common brick produced was but three per cent. more than the previous year and hollow tile increased in output six per cent. Face brick, paving brick and varieties of fancy brick on the other hand, decreased in output.

VALUE OF CLAY PRODUCTS INCREASED

Of the \$364,220,000 brick and tile represents \$258,520,000, while \$105,700,000 represents the total value of the pottery output. The percentage of increase of all brick and tile in 1920 over 1919 is 40 per cent. while pottery has increased 39 per cent.



Production and Price of Common Brick. Solid Line Is Based on Figures at Left. Broken Line on Figures at Right.

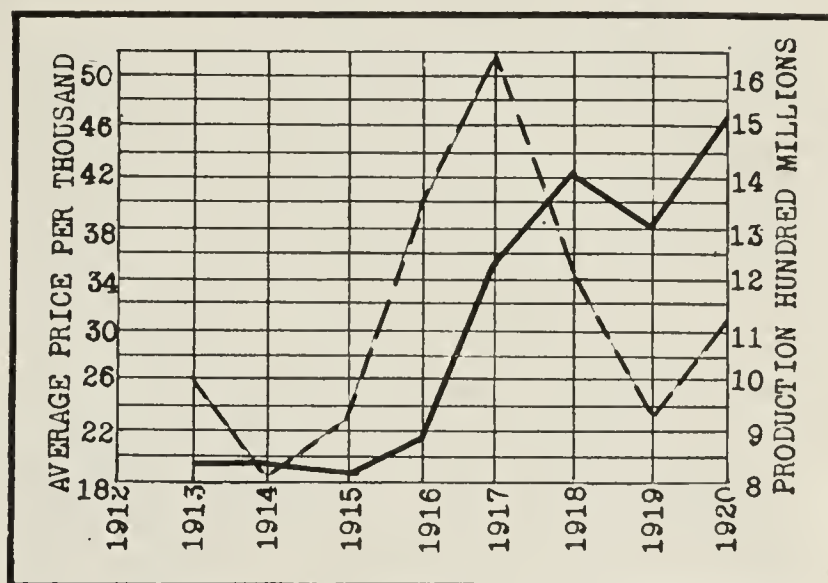
The value of every kind of clay product except fancy or ornamental brick, a very minor product, increased in 1920, as compared with 1919. The quantity of every kind except face brick and paving brick also increased. The decrease in the latter two kinds of clay products was comparatively small, face brick production declining but six per cent.

GREAT GAINS IN AVERAGE PRICE

Since brick and tile depend for their market almost wholly on the construction industry it is only natural that they should record a good year in view of the fact that 1920 was a year of considerable building. Tho the increase in value is tre-

mendous the gain in quantity is comparatively slight being less than that of 1917 in every case.

The great increase in value is easily understandable, however, when the gain in the average price per unit of the various types of clay products is taken into consideration. Common brick increased in price 35 per cent.; face brick, 34 per cent. hollow building tile, 47 per cent.; vitrified brick, 18 per cent.; fire brick, 22 per cent. These increases are considerably more



Production and Value of Fire Brick. Solid Line Is Based on Figures at Left. Broken Line on Figures at Right.

than those recorded in 1919. The average increase in price in all these wares from 1916 to 1920 was 124 per cent.

The structural clay products as a whole (mainly brick and tile) produced in 1920 were valued at \$147,540,000, or 57 per cent. of the total of all brick and tile products, as compared with \$102,850,000 in 1919 and \$66,209,300 in 1918. Engineering products (vitrified brick, sewer pipe, and drain tile) rose in value from \$37,800,000 in 1919 to \$47,340,000. Refractories (fire brick and stove lining) increased in value from \$36,900,000 in 1919 to \$53,640,000.

STEADY ADVANCES IN COMMON BRICK SINCE 1918

Common brick again dominated all other clay products in quantity and value as it has every other year except in 1918 when war restrictions reduced the output and the unusual demand for fire brick swelled the production totals of that product. The total number of common brick produced in 1920 was 4,709,000,000, an increase of 156,333,000 over the output in 1919. Tho the gain at first glance seems fairly large yet it is safe to assume that common brick has not as yet reached its normal production total. The output for 1920 is the smallest yet recorded by the Geological Survey excepting for the years 1919 and 1918. A glance at the graph showing the production of common brick since 1899 shows that this product still has a long upward climb to reach the maximum output it attained in 1906. Over 12,000,000,000 were manufactured in that year.

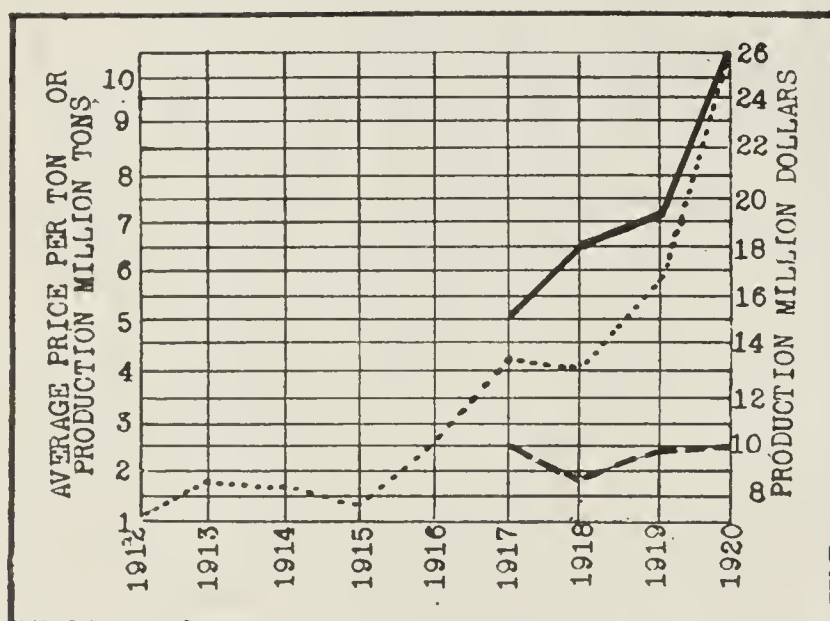
The use of patented materials and substitutes of various kinds has in all probability affected the sale of common brick to a certain extent. It may or may not be significant that common brick has continued steadily to increase in quantity since 1918, which is also the year in which the common brick manufacturers organized to boost their product. It will be interesting to see how the new ideas in brick construction promoted by the Common Brick Manufacturers' Association will affect the sale of common brick during 1921. However, it is a question whether the new brick hollow wall will have any appreciable effect upon the total sales of the commodity.

A gain of 35 per cent. in the price per thousand was also recorded, practically equivalent to the gain in value which was 40 per cent. The average 1920 price was \$17.27 as compared with \$12.79 in 1919. The value of common brick produced in 1920 reached the enormous total of \$81,330,000, an increase over the previous year of \$23,110,000 and the greatest advance ever recorded for any single year. The production increased but three per cent. over 1919.

FIRE BRICK VALUE ADVANCES 46 PER CENT.

Fire brick, the only clay product that has been able to compete with common brick in value also reached the maximum value ever recorded by the Geological Survey for that product. In 1919 the value of this commodity was \$36,170,000 and jumped to \$52,750,000 in 1920, an increase of 46 per cent. Altho the average price per thousand in nine inch equivalent also increased the gain was not at all in proportion with the advance in total value. The 1920 average price was \$46.64 as compared with \$38.32 in 1919, a gain of 22 per cent.

Unlike the other clay products in 1920, the big increase in the value of fire brick was due more to the increase in the total output, than the increase in the average price per thousand. The output of fire brick in 1920 increased 20 per



Hollow Building Tile. Solid Line Shows Average Price Based on Figures at Left. Broken or Dashed Line Shows Production of Million Tons Based on Figures at Left. - The Dotted Line Shows Gross Production in Millions of Dollars Based on Figures at Right.

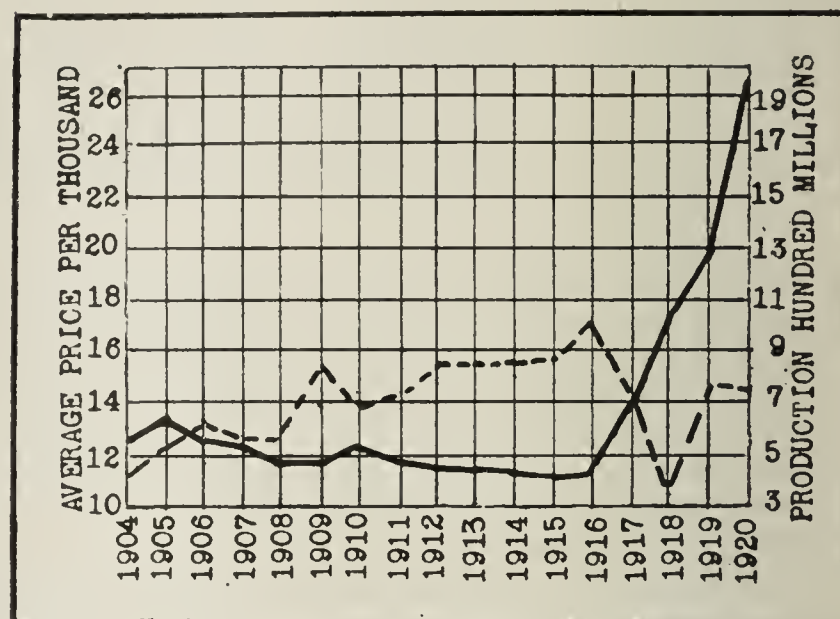
cent. over that of 1919. In spite of this increase, which brings the total up to 1,131,000,000 brick, nine inch equivalent, the total production nevertheless does not measure up to the total production for any one of the five years previous to 1919. The total number of fire brick produced in 1919 was 943,942,000. The output of fire brick in 1920 is very nearly a normal figure for a year's production of that commodity.

TILE OUTPUT INCREASES SIX PER CENT.

Hollow building tile, the third product in value, which has been steadily gaining in use, rose in value from \$16,620,000 in 1919 to \$25,900,000 in 1920, an increase of \$9,280,000. If the 1917 production of 2,590,028 tons can be considered normal, hollow building tile has enjoyed a normal output during 1920.

The total number of tons produced in 1920 is 2,457,000, an increase over the previous year of 146,550 tons. The 1920 total is but 133,028 tons behind the 1917 total.

Hollow tile is one of the newest and least developed of clay products and it is probably safe to say that this material has a big future before it. The output of this commodity has steadily been increasing and in 1920 again occupied third place, ahead



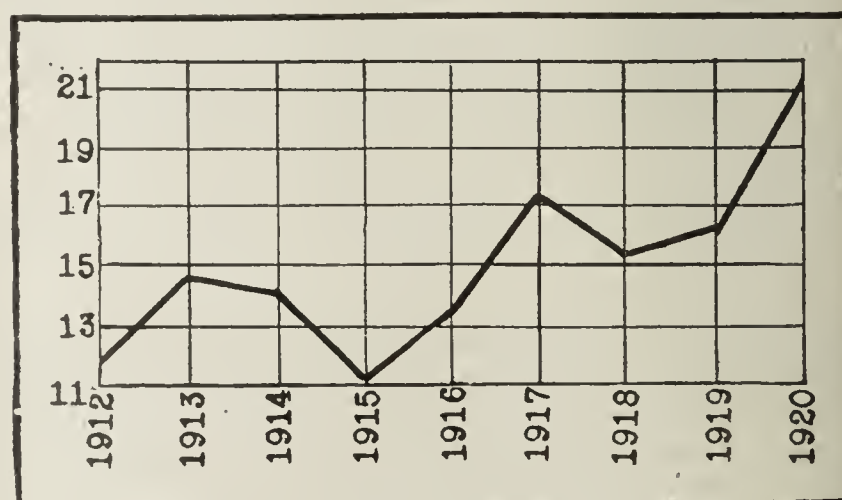
Production and Price of Face Brick. Solid Line Is Based on Figures at Left, and Broken Line on Figures at Right.

of face brick. It would not be surprising if before very long, hollow tile approached fire brick in the value of total output. The intensive advertising by the Hollow Building Tile Association and its increasing use in farm buildings and residences will do much to bring it to a position where it will rival common brick as the most important building material.

1920 SEWER PIPE VALUE HIGHEST EVER REACHED

The fourth product in value of output, was sewer pipe increasing in value from \$16,170,000 in 1919 to \$22,240,000 in 1920. No estimate has been made of the tonnage of this output, but it seems probable that the increased value was due largely to a greater selling price. The 1920 value of sewer pipe exceeded every other year including 1917 when production reached a maximum point.

While the production of paving brick decreased from 485,139,000 to 442,000,000 or nine per cent., the average price increased from \$23.11 to \$27.17 or 18 per cent. This increase in the average price made up for more than the loss in production, so that the gross value increased seven per cent.



Sewer Pipe. Value of Gross Production in Millions of Dollars.

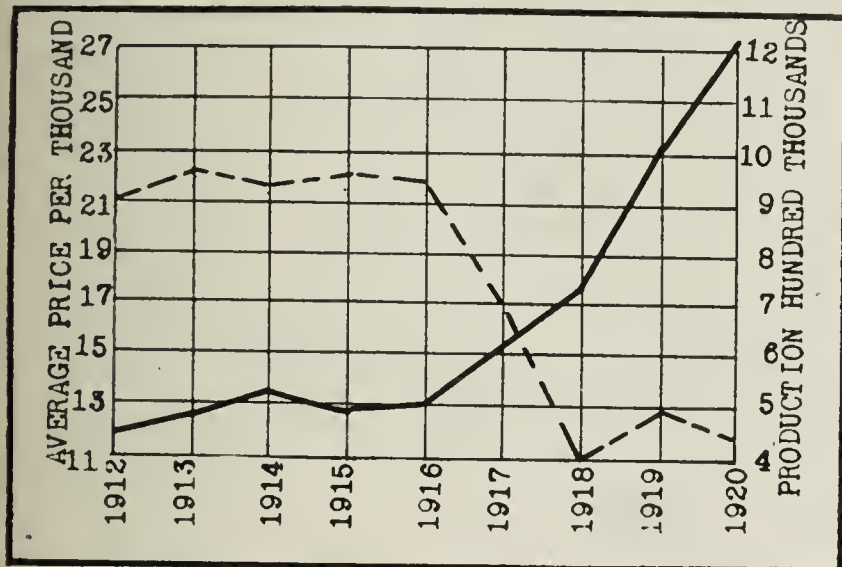
from \$11,210,000 to \$12,020,000. No doubt the condition of the money market and the high rates that cities and counties were forced to pay for money held up a very great deal of paving and caused this loss in production.

Like sewer pipe, drain tile also showed a considerable increase in value over 1919. The total value of drain tile produced in 1920 was \$13,080,000 an increase over the previous year of \$2,660,000 or 26 per cent. The percentage gain of drain tile in 1920 was considerably less than that of sewer pipe, the latter increasing 38 per cent.

Unlike other important products, face brick showed a decrease in output from 778,190,000 brick in 1919 to 728,000,000 brick in 1920, but the value increased from \$15,240,000 in 1919 to \$19,050,000 in 1920. The decrease in the production of face brick was but six per cent., whereas the average price per thousand, rose 34 per cent. from \$19.58 to \$26.18. This of course, accounts for the increase in the value in spite of the decrease in production.

FACE BRICK HAS MUCH COMPETITION

Face brick manufacturers are facing a harder problem in the marketing of their product than any of the other clay

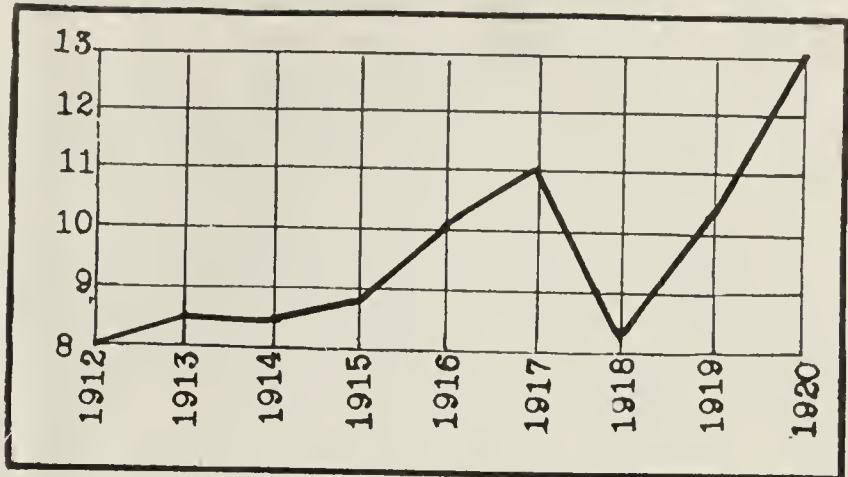


Production and Value of Paving Brick. Solid Line Is Based on Figures at Left. Broken Line on Figures at Right.

products manufacturers. This is due to the great amount of other materials with which face brick must compete. All the various styles of stucco and other types of facing materials which have lately gained more or less popularity, are encroaching to a large extent on the field which the face brick

manufacturer is serving. The advertising which the American Face Brick Association is doing will go a long way toward restoring face brick to its rightful place in the list of clay products building materials.

Architectural terra cotta, valued at \$9,480,000 in 1920, shows the largest proportionate gain in 1920, increasing in value 96



Drain Tile. Value of Gross Production in Millions of Dollars.

per cent. over the previous year. This is the highest value which terra cotta has ever reached. When looking over the various types of construction in 1920, the enormous increase in the use of terra cotta is readily explainable. During 1920 a great number of business buildings, office buildings, theatre buildings, and other buildings of the type which use a great deal of terra cotta in their construction, were erected. Terra cotta is rapidly increasing in popularity for office buildings especially, on account of its many qualifications which make it peculiarly adaptable for such buildings.

1920 IMPORTS ADVANCE 52 PER CENT. OVER 1919

The value at the principal markets of the country from which they were shipped, of the clay products imported and entered for consumption in the United States in 1920 was \$11,269,070, which represents an increase of 52 per cent. over 1919. Brick, tile, and pottery imports each increased in value as compared with 1919. As in domestic products, part of the increase was due to the enhanced value of the ware, tho the bulk of imports also increased very considerably. Pottery

CLAY PRODUCTS IN THE UNITED STATES IN 1919 AND 1920.

	1919 (Estimated)	1920 (Estimated)	Approximate Increase or Decrease in 1920	
			Quantity or Value	Per Cent.
Common Brick:				
Quantity (thousands).....	4,552,667	4,709,000	+ 156,333	+ 3
Value	\$58,220,000	\$81,330,000	+ \$23,110,000	+ 40
Average price per thousand.....	\$12.79	\$17.27	+ \$4.84	+ 35
Face Brick:				
Quantity (thousands).....	778,190	728,000	- 50,190	- 6
Value	\$15,240,000	\$19,050,000	+ \$3,810,000	+ 25
Average price per thousand.....	\$19.58	\$26.18	+ \$6.60	+ 34
Enameled brick	\$640,000	\$820,000	+ \$180,000	+ 28
Fancy or ornamental brick.....	\$40,000	\$30,000	- \$10,000	- 25
Hollow Building Tile or Block:				
Quantity (tons)	2,310,450	2,457,000	+ 146,550	+ 6
Value	\$16,620,000	\$25,900,000	+ \$9,280,000	+ 56
Average price per ton.....	\$7.19	\$10.54	+ \$3.35	+ 47
'Tile (not drain).....	\$7,250,000	\$10,930,000	+ \$3,680,000	+ 51
Architectural terra cotta.....	\$4,840,000	\$9,480,000	+ \$4,640,000	+ 96
Vitrified brick or block:				
Quantity (thousands).....	485,139	442,000	- 43,139	- 9
Value	\$11,210,000	\$12,020,000	+ \$810,000	+ 7
Average price per thousand.....	\$23.11	\$27.17	+ \$4.06	+ 18
Sewer pipe	\$16,170,000	\$22,249,000	+ \$6,070,000	+ 38
Drain tile.....	\$10,420,000	\$13,080,000	+ \$2,660,000	+ 26
Fire Brick:				
Quantity (thousands).....	943,942	1,131,000	+ 187,058	+ 20
Value	\$36,170,000	\$52,750,000	+ \$16,580,000	+ 46
Average price per thousand.....	\$38.32	\$46.64	+ \$8.32	+ 22
Stove Lining	\$730,000	\$890,000	+ \$160,000	+ 22
Miscellaneous	\$7,100,000	\$10,000,000	+ \$2,900,000	+ 41
Total brick and tile.....	\$184,650,000	\$258,520,000	+ \$73,870,000	+ 40
Total Pottery.....	\$76,140,000	\$105,700,000	+ \$29,560,000	+ 39
Grand Total.....	\$260,790,000	\$364,220,000	+ \$103,430,000	+ 40

of course represents by far the greatest part of the imports. But four per cent. of the value of the imports was represented by brick and tile, 96 per cent. being attributed to the increased pottery imports.

The exports of clay products increased considerably in 1920. They were valued at \$9,397,623, which represents an increase of \$2,815,339 as compared with 1919. The exports of brick and tile increased in value from \$3,625,038 in 1919 to \$5,608,163 in 1920. Fire brick, the largest item, was valued at \$4,200,266 and constituted 45 per cent. of all exports of clay products and 75 per cent. of brick and tile exports. This value represents an increase of \$1,452,754 as compared with 1919. The quantity of building brick, both face and common, exported in 1920 was 12,863,000 an increase of 694,000 as compared with 1919. Fire brick exports amounted to 82,570,000, an increase of 31,318,000 as compared with 1919. Pottery exports were valued at \$2,837,469, an increase of 27 per cent. over 1919.



New Department Paving Brick Association

Organization of a new department, with an expert in charge, is announced by the National Paving Brick Manufacturers' Association, Cleveland, Ohio, this week. The new department will start operating September 1, and will have to do with the gathering and distribution of information of value and importance to the paving brick industry and associated interests, including costs, road construction, increasing of public interest in better highways, what state and federal governments are doing to improve the road material and building situ-

ation and will supply other information of vital importance.

The bureau will be under the direction of Stanley A. Knisely, former newspaper man, and specialist on articles and an investigator of conditions of public interest. Mr. Knisely formerly was city editor of the Cleveland (Ohio) "Plain Dealer," more recently has been connected with "Finance and Industry," the largest financial journal in Ohio, and has had wide and varied experience in the journalistic field in this section. His advent with the association, and the development of the bureau, will be factors in establishing a better understanding, by the public, of paving brick and good roads, association officials believe.



Research Bureau to Study Kiln Processes

Plans for a field study of kilns and burning processes were laid this week at a conference held at Columbus, Ohio, by A. V. Bleininger, chairman of the technical committee of the joint research bureau of allied clay products' organizations, and R. T. Stull, superintendent of the bureau of mines ceramic station at Columbus, and Messrs. Hood and Blizzard, fuel specialists of the bureau of mines. The work will be conducted by Messrs. Bachman, Baker and Zehm, of the bureau of mines. These investigations will be supervised by Fred Hazelwood, research assistant in the bureau of standards.

The joint research committee includes the American Face Brick Association, the Hollow Building Tile Association, the Common Brick Manufacturers' Association of America and the National Paving Brick Manufacturers' Association.



COMMON BRICK MOVING FREELY *in* NEW YORK— STEEL PRICES UNSTEADY

WINDOW AND PLATE GLASS are the latest factors in the building material market to show price-lifting tendencies, says the Dow Service daily building report of August 27.

General unsettlement of steel prices has disturbed the structural steel price situation at a time when it seemed as tho some stability was to develop. There is, at least, some improvement reported in inquiry, especially for material to be delivered in the first part of 1922, but now that another price cut has occurred some of this business may not be closed until the latter part of this year. There has been a slight increase in tonnage. Prices seem to depend entirely upon specification.

COMMON BRICK MOVING FREELY

Spruce lath at \$10.50 a thousand has not been officially recorded as turning upward, altho some dealers in this city are selling at \$11 and some at \$11.50. The reason for this stiffness in price is ascribed to shortage of stock at mill centers. From mill centers word comes that this material is low in stock, because it pays manufacturers better to turn their spruce into paper pulp to meet the demand for newsprint. In the meantime the stocks of lath in New York and vicinity are becoming so low that some dealers are supplying the needs of competitors.

Common brick in the wholesale market is being rapidly absorbed with supply plentiful for the present rate of building construction. Raritan common brick is moving in at the same price as Hudson common brick, or \$15 a thousand, wholesale, to which must be added for delivered prices the cost of handling, haulage and ten per cent.

SECOND HAND BRICK PLENTIFUL

The major supply of second-hand common brick is coming for the moment from the lower section of Manhattan, where buildings are being razed for the Federal Reserve Bank. Consequently, while truckloads of 3,000 were formerly purchasable above 42nd street at \$33, it now costs \$35 for this brick if delivered between 42nd and 110th street and \$37.50 if delivered above Central Park or in Long Island City.

There has been a slight slip-back in price of asphaltum for paving, roofing, and waterproofing purposes to contractors, paving being now quoted at \$22 and roofing and waterproofing asphaltum at \$23.

PRICES REMAIN STEADY

Building materials, for the most part, are well sustained in prices; action in steel prices has, in the recent past, been the forerunner of price changes in some of the other basic building materials, but the market did not seem to think that such would be the case in the current instance, as there was more stability to the basic building material market, outside of Manhattan, below 59th street.

The factor making for higher glass prices is due, first, to a great disturbance in the glass-making labor market in Belgium and to the fact that about one-third of the American window glass producing capacity has closed indefinitely. The other two-thirds of the American glass industry is operating at twenty-five per cent. of capacity.

Stocks in jobbers' hands are now extremely light, and replacement, they report, is becoming increasingly difficult. This scarcity has tended to advance jobbing prices of window glass.

THERE'S PLENTY BUSINESS *for* THIS CONCERN

Low Operating Costs Enabled Barron Brick Co. to Produce at Full Capacity and Make Substantial Profits in a Demoralized Market

IF YOU HAVE ever had occasion to travel on the Chicago and Alton or Sante Fe Railroad thru the northeastern section of the State of Illinois, you undoubtedly have noticed that the only thing that broke the monotony of the smooth prairies was an occasional hill of gray material reaching as a triangle into the sky like an Egyptian pyramid.

Those huge hills which sometimes reach as high as 175 feet are made of refuse material from a coal mine which is now operated or may previously have existed at that spot. The material is usually a gray-like colored substance, altho quite frequently it has a red colored appearance somewhat like iron ore. The gray material is a fire clay or shale, or a combination of both.

Prior to the erection of his plant at Roanoke, Illinois, in 1916, John T. Barron was a new man in the clay products industry. He had been a successful manufacturer of high explosives but sold out his principal holdings in 1914 and was induced to investigate the clay products field by James D. Marnane, his brother-in-law, who had for many years previous been associated with the sale of building materials in the city of Chicago.

WANTED FIREPROOF PLANT

Before establishing a plant, Mr. Barron visited a great number of factories to learn of the latest and best practices in clay manufacture. Many of the plants he saw did not measure up to his idea of an efficient and economical plant and Mr. Barron decided that should he go into the business he would erect for his production, an efficient operating plant that would at all times advertise the product he desired to produce and be absolutely fireproof.

One feature in which Mr. Barron differed from the methods pursued by other clay plants was the location of a factory at the source of supply of not only the raw material, but also the fuel. This he believed would result in great economy from the saving of freight on coal used on the plant. Thus, it was decided to use shale and fire clay such as is found in those hills referred to in the early part of this article but which had at all times been considered by manufacturers to

be unsafe because of the high carbon content, shrinkage, impurities, and so forth.

An option was obtained on a tract of land adjoining the Roanoke (Ill.) Coal Co.'s mine and a tentative agreement made for the waste material dumped from the mine, coal, and so forth. The spoil pile of this coal company forms a mountain approximately 155 feet high to the peak and contains both fire clay and shale mixed in equal proportions. Moreover, this pyramid of clay is over one-half mile around the base. This particular mountain of clay was decided upon as the source of supply for the plant.

BUILD MODERN, EFFICIENT PLANT

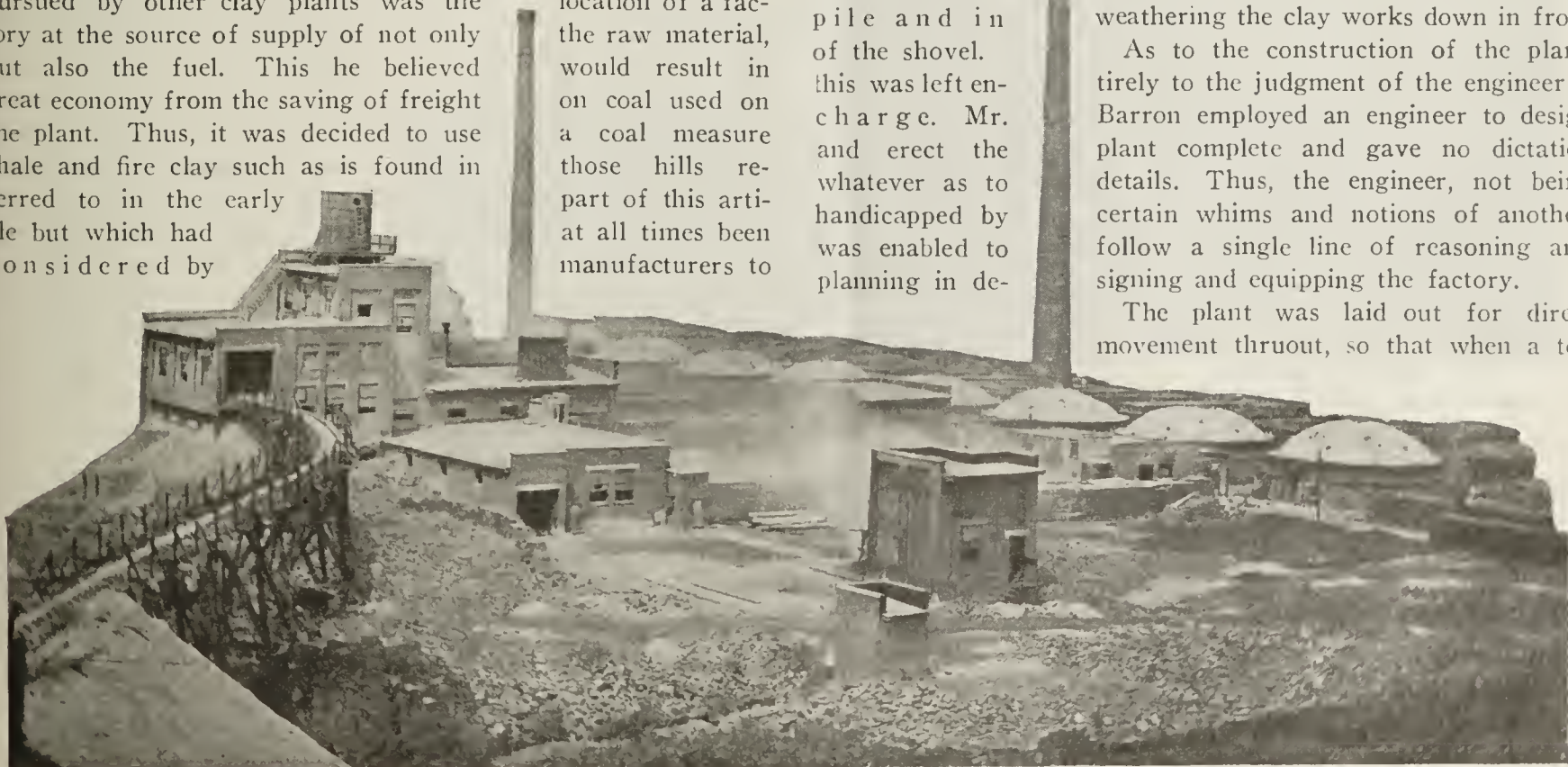
For a number of years this clay had been worked by a brick manufacturer but the plant was only partially successful. This plant was purchased by Mr. Barron and associates, but was scrapped entirely and a new plant built which embodied the best manufacturing practices known at that time. In this way the Barron Brick Co. made its start.

In many plants clay storage is provided for, and it is generally conceded that if clay is weathered, it adds to the economy in production and produces a superior quality of ware. The quantity of clay storage for the Barron Brick Co. which is represented by the cone of mine refuse, is almost beyond comprehension, and contains approximately 1,500,000 tons of raw material in all stages of weathered condition. Without the mine operating and dumping any more refuse there is sufficient clay to last twenty-five years. It has operated continuously since 1916, turning out many thousands of tons of ware, and still the steam shovel is within twenty feet of the point where fact that refuse pile and in of the shovel. this was left en-charge. Mr. and erect the whatever as to handicapped by was enabled to planning in de-

it was first placed. This is due to the is continually being dumped onto the weathering the clay works down in front

As to the construction of the plant. tirely to the judgment of the engineer in Barron employed an engineer to design plant complete and gave no dictation details. Thus, the engineer, not being certain whims and notions of another, follow a single line of reasoning and signing and equipping the factory.

The plant was laid out for direct movement thruout, so that when a ton



General View of Factory, Dryer, Fan House and Kilns of Barron Brick Co., Roanoke, Ill.

of product moved, it proceeded toward shipment. A one-man operated Thew shovel was mounted on the side of the clay dump, 28 feet above the dry pans, and an elevated third rail track was erected between the shovel and the plant receiving room. A specially constructed electric-driven clay car is used to transport the clay from the shovel to the plant, which is operated by one man, and in this manner two men with two machines can deliver all the clay required up to 400 tons per day.

GRAVITY SYSTEM USED

The clay is fed by semi-gravity into the dry pans thru ports in the receiving room wall. The crushing room is shut off by heavy brick walls from all other parts of the plant, localizing the dust. The dry pans deliver the crushed material by gravity to elevators which deliver it to screens located 46 feet above grade. The screened material is delivered by gravity into large reinforced hoppers or storage rooms holding 400 tons and situated directly above the pugmill, which is located on a reinforced concrete and steel constructed balcony extending across the entire width of the machine room. This balcony, which is 30 by 46 feet, not only supports the pugmill, but the main line shaft, which drives the pugmill, two auger machines, cutter, and so forth. The pugmill is fed by gravity, and discharged by gravity into a No. 65 American Clay Machinery Co. auger, and by conveyor to a No. 10-B Brewer Tile Machine. Thus, this pugmill, which is a long one, feeds both machines simultaneously.

The two auger machines are set for discharge toward the kilns, and located in a room 46 by 63 feet, equipped with cutters and off-bearing belts, return waste clay belt, and so forth.

The return tracks from the kiln transfer permit the car to pass by the off-bearing belts to be loaded, and are delivered to the dryer transfer and the receiving shed of the dryer direct, without a turntable. The cars pass thru the dryer to the discharge shed on the opposite end of the dryer, and the electric transfer delivers the ware direct from the dryer



View in Boiler Room. Unfortunately This Picture Does Not Show Lighting Arrangement.

to any one of the 12 kilns. The transfer track parallels the kilns on one side and the shipping track, which is depressed, parallels the other side, permitting direct shipment from the kilns, while the storage is on the opposite side of the shipping track from the kilns.

NO CROSS CURRENTS IN DRYER

Construction of the dryer differs from ordinary practice. It is built so that there are no cross currents, and thereby prevents any of the vapors from coming in contact with the

ware after it has been driven out, whether it is being carried thru the tunnels above or below the cars. The dryer has only 12 tracks, holding 15 cars each inside the tunnels, and three on each end outside, or in the receiving and discharge ends of the dryer.

Just inside of the receiving end is the ordinary underground exhaust duct, and above is also an exhaust duct 50 feet from the receiving end. The ceilings of the dryer tunnels are raised



Special Clay Haulage Car Which Operates on Third Rail Between Shovel and Factory.

from six inches to two feet, and the raised portion is connected with the overhead exhaust duct, which discharges all vapors driven from the cars, while the underground duct discharges all heavy vapors above the track just below the cars, permitting the vapors above and below to follow the lines of least resistance. The gases from the kilns are pulled by a twenty-foot fan operated by a 35-horsepower Western Electric Co. motor.

The dryer cars are of the single deck type. The ware is able to stand enormously high temperatures and it is not infrequent that the gases entering the dryer are of a temperature of 450 deg. F. The dryer holds 180 cars, but it often occurs that the dryer is turned over twice in one day, since it is desired that 300 cars of material be made per day in order to maintain the highest production. One of the problems confronted by this concern is the enormous quantity of sulphur gases in the dryer which produces rapid deterioration of the dryer cars. It is necessary to rebuild the cars continually and one man is kept busy in the machine shop making new dryer cars.

HAVE TWELVE 32-FOOT KILNS

The kilns, twelve in number, are 32 feet inside diameter, with large underground draft ducts running at an angle of 30 degrees, connected with the smoke duct on the shipping track side and the waste heat duct on the transfer side. The kilns are equipped with two 150 feet radial block stacks, one to each six kilns, which provide an excess draft controlled by dampers. The excess draft was provided for the purpose of controlling the combustion and products of combustion of the carbon content of the clay, as the clay contains approximately six per cent. fixed carbon, and it was intended to not only eliminate the ordinary risk in burning out a high percentage of fixed carbon, but to utilize to the fullest extent the heat produced, and so control the air admitted into the kilns, that all the moisture may be vaporized and disassociated into its elements of oxygen and hydrogen. The hydrogen combining with carbon to form CH_4 (methane) would also be utilized in the production of heat and properly distributed and controlled. Another feature of the excess draft was to be able to reduce the burning time to a minimum.

The kilns have a capacity of 115 to 140 tons of ware and are burned at the rate of 17 kilns every two weeks. The

burning time is approximately 72 hours for burning and 96 hours for cooling. Burning is controlled by Brown pyrometers and settle measurements. A settle of seven inches is usually secured in the burning.

PORTABLE FAN HELPS COOLING

In cooling the kiln, all air is admitted thru the fire boxes, thereby obtaining equal distribution thruout the kiln and drawing the air down



This View Shows Part of Factory, Also Part of "Jumbo," the Source

thru the ware to the underground duct and out into the waste heat duct, thereby reducing the time of cooling to a minimum. A portable fan outfit which blows cold air into the kilns is used for helping the cooling and enables the unloaders to enter the kiln at an early moment.

The kilns are maintained in good condition, one mason being employed continually on repairing and remodeling. The kiln crowns are covered with waterproofing and kept continually in good condition.

The power plant is compact, but with all space efficiently utilized. The steam is produced by three ordinary tubular boilers of 450 horsepower, all hand fired, equipped with blowers and balanced draft. The coal is placed directly in front of the boilers and the room is so arranged that there are two large doorways, enabling the coal carts to pass right thru without turning around. A light at every instrument facilitates the regulation and control of the boiler plant.

250 HORSEPOWER DRIVES MAIN SHAFT

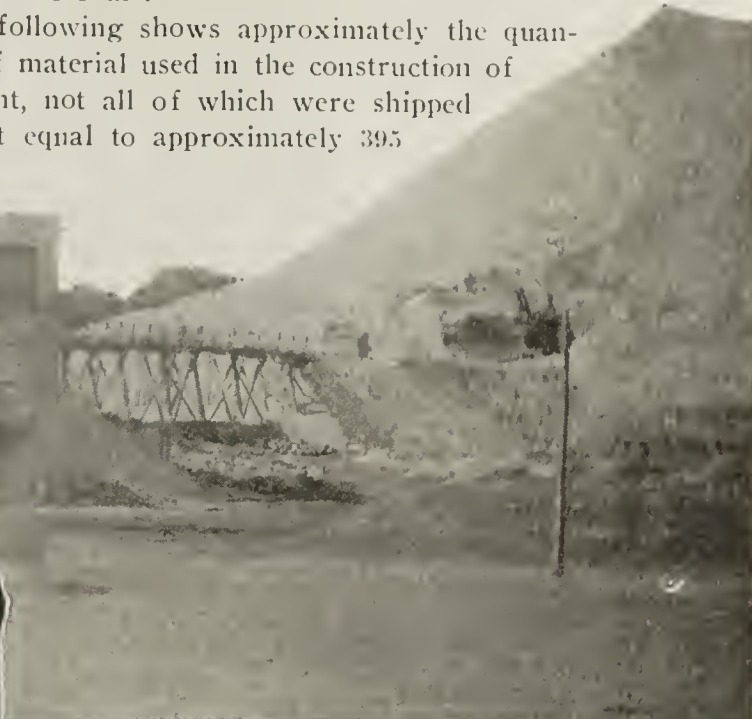
The engine room has three engines. The 250 horsepower Murray Corliss drives the main lineshaft. An automatic 75 horsepower simple engine drives the dry pans, elevators and equipment in the machine shop, enabling these departments to operate separately if it is so desired. All of the electric power for driving the waste heat fans, exhaust fan, clay car, transfer cars and electric lighting, is furnished by a 75 K. W. generator direct connected to an Ideal Tandem Compound Engine. Unusual precaution has been taken to guard all machinery well.

The entire plant is fireproof, and constructed of concrete, brick, building tile and steel with heavy concrete foundations, heavy brick pilastered and paneled walls and reinforced concrete roofs covered with five-ply tar and gravel roofing, supported by steel trusses and purlines. The elevated track between the plant and the supply of raw material is supported on a trestle constructed of heavy timbers, which will eventually be filled in,

so that when the timber is decayed, the permanent track will be supported by the fill.

This trestle ranges from 28 to 38 feet high, about 400 feet long, running on a level from the clay receiving room to the mountain of shale.

The following shows approximately the quantities of material used in the construction of the plant, not all of which were shipped in, but equal to approximately 395



of the Clay. Position of Steam Shovel Can Be Seen.

carloads: 3,200 barrels of cement; 3,000 yards of crushed rock, or its equivalent; 3,500 yards of sand; 3,000 barrels of lime; 2,500,000 brick; 200,000 fire brick; 300,000 feet of lumber; 400 tons of hollow building tile; 20 tons of steel, reinforcing, castings, and so forth; ten carloads of machinery, millwork, and so forth.

The management went thru all of the grief and perhaps more, that all clay product manufacturers find in placing a new plant into operation. The engineer did not claim to know production, and depended upon the management to provide those skilled in the art of producing clay products. Unfortunately, when a superintendent was employed, he immediately



Kilns Are All in One Single Row and Connected in Units of Six to the Two Large Stacks. Track on Right is Electric Transfer Track.

thought because the plant was not constructed like the plants he was familiar with, it would not work until he had revamped it. The management, however, persistently stuck to the theory that the engineer had designed the plant and every part of it for a specific purpose in an honest endeavor to reach maximum efficiency, and determined that an honest effort would have to be made to operate the plant as constructed. Numerous superintendents who came highly recommended were discharged, and eventually it was decided to make one out of the machine room foreman, who had years of experience, was



Setters Placing Tile in Round Down-Draft Kilns.

progressive, honest and willing. Charles E. Mullens was thus put in charge and the plant has made good ever since.

200 TONS OF HOLLOW WARE DAILY OUTPUT

The capacity of the factory was designed to be from 125 to 130 tons of hollow ware or 60,000 brick per day. However, the average capacity is away above this, reaching 200 tons of hollow ware per day. This output is maintained even at the present time and with a working force of 65 men.

In order to efficiently handle the detail work necessarily involved in the business, the Barron Brick Co. finds it essential to retain a Works' Office at Roanoke, to take care of the usual factory reports and the shipping. The general office of the company is located in the Tribune Building, Chicago, where the billing, general and cost accounting, sales and distribution, and other administrative work is given close attention.

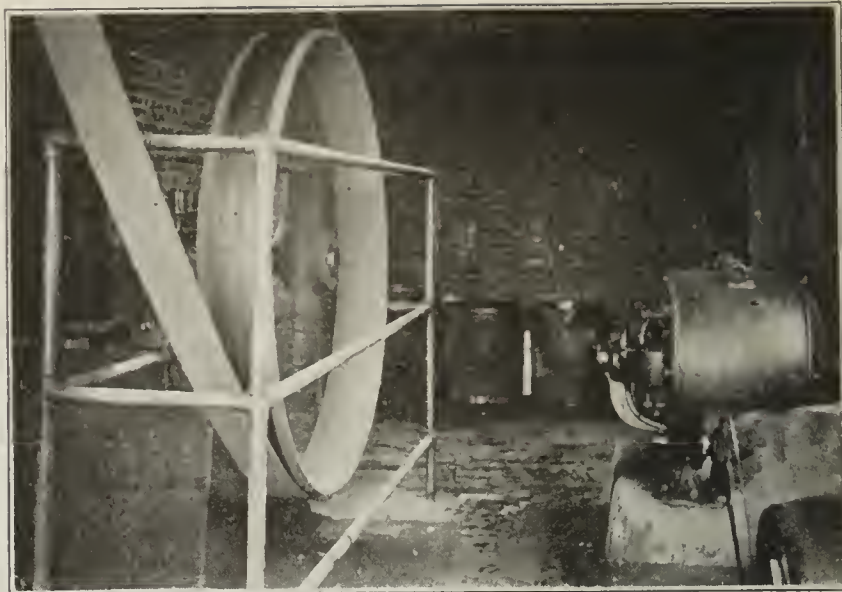
The cost system which is used by the Barron Brick Co. is quite complete and yet very easily understood. In the first place, the Barron Brick Co., has somewhat simplified the otherwise complicated affair of keeping records by having the cost sheets made up in ruled and printed forms, consisting of seven blanks, compiled in such a manner as to follow the raw material from the clay mountain or "Jumbo," as it is usually called, to the loading into the car, a finished product. Power and distributive or works expense is pro-rated over the various operations. Thruout the entire system, the use of symbols is employed, and in this work it has been found that letters using the first initial of each work of the operation, are much easier to retain in mind than figures would be; for instance, HTM, meaning Hollow Tile Manufactured; MOS, Main Office Supervision, etc.

MACHINE KEEPS RECORDS

The books of this company are closed monthly, taking off what is called a summary sheet—also a printed form, which shows the profit for the month, as well as to date this year. From this it can be readily seen that a "Statement of Income and Profit and Loss" can easily be evolved.

Practically all of the weary figuring naturally accompanying cost accounting, is unknown to The Barron Brick Co., due to the fact that they have employed in their cost work a nine-digit "Merchant Calculating Machine," Pony size. The Barron Brick Co. reports that this machine has easily displaced three girls and simplified the keeping of cost records. They don't hesitate to recommend it very highly.

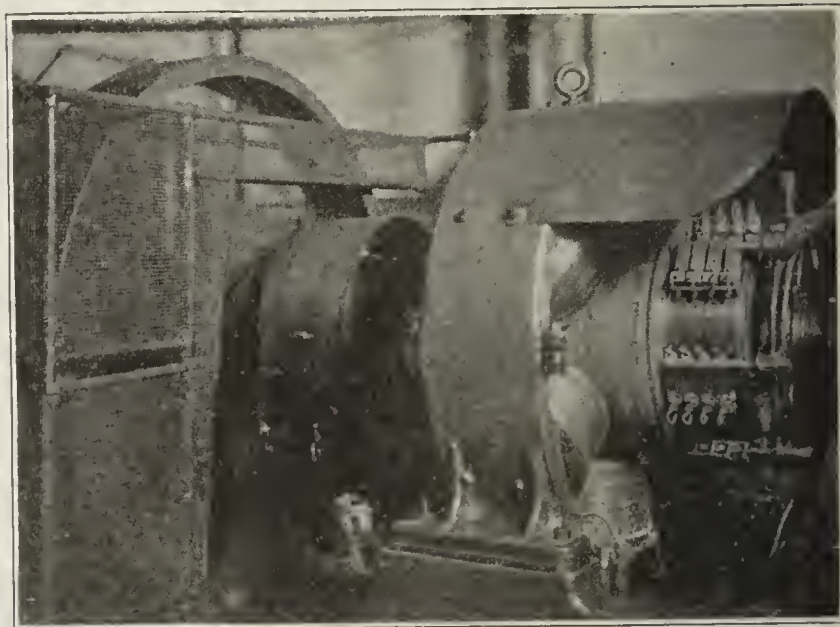
This year admittedly has been a poor one for most business concerns in many lines. The Barron Brick Co., however, has continually been and is maintaining full production at the present time. The ware is shipped to Wisconsin, Minnesota, the Dakotas, Wyoming, Nebraska, Michigan and Missouri. It is distributed exclusively thru dealers and agencies thruout the



Motor Drive Unit for Large Fan Which Draws Gases from Kilns.

central and western states. A connection in the various cities of the territory covered by this plant is made and held thru mutual cooperation.

The maintenance of full production at all times during the present period, may seem mythical, but it is only made possible because of the low operating cost due to an efficient plant, a very high quality of product and a careful selection of a large group of jobbers and dealers who are kept continually contented by splendid cooperation and protection.



Dynamo-Generator Set Which is Main Source of Power for Clay Working Machinery.

Moreover, the telephone comes in for its share of the credit for keeping the plant at full production. Dealers and contractors in far-off towns are handled by telephone in preference to letter or telegram. This gives the Barron Brick Co. an opportunity to make itself fully understood as to quality of product, prices, delivery, etc., and enables it to render better service. Furthermore, they get the order before the customer has an opportunity to shop around and be influenced by others in the field. It costs the Barron Brick Co. a telephone bill of several hundred dollars a month, but it pays.

✱ ✱ ✱

Open Shop at Erie

In Erie, Pa., the contractors are operating on an open shop basis with the following wage scale: Carpenters, 85 cents an hour; electricians, 85 cents an hour; bricklayers, \$1.04 an hour; plumbers, \$7.75 per day; plasterers, \$1.12½ an hour; painters, 75 cents an hour; sheet metal workers, 90 cents an hour.

Sand-Lime Brick Output in 1920

The sand-lime brick business of the country progressed during 1920 in line with other grades of brick, as shown by the following tabulations:

	1920	1919	Percentage gained 1920 over 1919
Sand-Lime Brick			
Gross output	169,761,000	146,947,000	16
Gross value	\$2,490,283	\$1,705,163	46
Average price per thou- sand	\$14.67	\$11.60	26.5
Common Brick Clay			
Gross output	4,709,000,000	4,552,667,000	3
Gross value	\$81,330,000	\$58,220,000	40

Average price per thou- sand	1920	1919	Gain
	\$17.27	\$12.79	35

Since ninety-nine per cent. of the output of sand-lime brick in 1920 was marketed as common brick, this comparison is very pertinent. The five leading states in the production of sand-lime brick ranked as follows:

	In gross value	In gross output
Michigan	1	1
Minnesota	2	2
Wisconsin	4	3
Florida	3	4
New York	5	5

These five states produce over sixty-three per cent. of the sand-lime brick of the country.



CORRECT MISLEADING REPORTS of BAD CROP CONDITIONS

INFORMATION of vital importance to the clay products manufacturer, as well as to every business man in the country is contained in a letter recently sent to Senator G. W. Norris, Chairman of the Senate Committee on Agriculture, by the Agricultural Publishers Association.

The letter comments on the recent crop estimate published by the Government, calling attention to a loss of 250 million dollars to the farmers during the month of July. This report, the Agricultural Publishers Association avers, gives but one side of the situation and tends to injure the credit standing of the farmer. The letter states in part:

"While the amount looks enormous to the casual observer, as a matter of fact, even if it really figured 250 million dollars, which is extremely doubtful, it would mean only one per cent. of the 25 billion dollar annual turnover of the farming business, or would compare with a salary cut from \$100 to \$99. Hence, the buying power of the farmer is not materially affected."

BUYING POWER OF FARMER NOT INJURED

That is of very vital significance. If the buying power of the farmer of the country has not been reduced to any appreciable extent he is in a position to meet his obligations. In the opinion of many bankers and financial experts the buying power of the farmer has a greater influence upon the prosperity of the nation than probably any other single factor. The buying power of the farmer unquestionably has a tremendous influence on a large percentage of manufacturers in the clay industry. Manufacturers of drain tile especially and some hollow tile manufacturers are dependent almost entirely upon the farmer to purchase their products.

It is extremely encouraging therefore, as well as of tremendous importance to business in general to know that the condition of the farmer is not as bad as it appears by the publicity given the various government crop reports.

Thru a practical agricultural expert of high standing the Agricultural Publishers Association has been able to obtain the following analysis of crops:

CROP DECREASE LESS THAN SEVEN PER CENT

"Judging from comments in the press on the Government crop report as of August 1, made public on the 8th of August, the crop outlook in the United States would be anything but encouraging, but here are the facts: Reports emphasized the reduction in the estimated yield on August

1 as compared with July 1, stating that the four crops, corn, wheat, oats, and Irish potatoes, decreased 396,000,000 bushels.

Now 396,000,000 bushels seems like a large figure and is, if considered by itself. But when compared with total estimated production of these four crops, 5,242,000,000 bushels, it represents a decrease of less than seven per cent. Furthermore, nearly half of the reduction is in oats, 192,000,000 bushels, a crop of comparatively low value.

FOURTH LARGEST CORN CROP DUE

"The fact is that the August 1 report forecasts 3,032,000,000 bushels of corn, which is only 6.2 per cent. smaller than last year's crop, the largest ever raised in this country. In other words, if the August 1 estimate materializes, it will be our fourth largest corn crop. Since corn is fully two weeks ahead of the average season, very little of it will fail to ripen, meaning that we are more apt to come up to the August 1 estimate than is usually the case at this season of the year.

"While the estimated yield of the wheat crop declined fifty-two million bushels between July 1 and August 1, the indications are still for a total yield of 757,000,000 bushels, as compared with 728,219,000 bushels, the average for the five-year period ending with 1914. In other words, this year's estimate indicates a four per cent. larger wheat crop than the average for the five-year period just prior to the war.

CORN BELT FARMERS HAVE GOOD PROSPECTS

"The average production of wheat during the six-year period ending with 1920, when the acreage was augmented on account of the war, was only 824,721,000, only about eight per cent. larger than this year's estimate. This speaks very well indeed for the indicated 1921 wheat crop.

"Considering our big corn crop, and the good showing made by the wheat crop, together with the low yield of bread grains in Europe, and our excellent live stock markets, the outlook for the American farmer this year in every section is most encouraging. While corn prices are relatively low, the corn that is being converted into pork will bring twice as much per bushel as it will sold at the elevator. Cattle will also pay a better price for corn than will the elevator. The more live stock the farmer feeds this year the more money he will make, hence the farmers of the corn belt states will fare very well indeed."

OUTPUT *of* CLAY MINES

SHOWS BIG GAINS *in* 1920

Imports of All Clays Increase 93.2 Per Cent.—Exports Gain 75 Per Cent.—Indications Are for Bright Future

THE CLAY MINING industry of the country in 1920 made a phenomenal growth compared with 1919 as shown by the figures produced herewith. It is interesting to note that while the tonnage production of kaolin, paper, slip, ball and stoneware clays all increased by large percentages, the importations of kaolin, china, common blue, Gross Almerode and all other unwrought or unmanufactured clays—this total including all crude clays—increased by 97.2 per cent. These tremendous increases can be explained only by the large gains of manufactured pottery and kindred products. The percentage increase in tonnage of fire clay mined is almost identical with the increase in manufactured fire brick.

With these marvelous increases in one year it is only natural that the industry should feel the slackening up that has taken place in the past few months. These gains are all the more wonderful when it is considered that the decrease in orders started in the latter part of 1920. In fact, the fire clay industry felt it in September and even then showed a forty per cent. increase in tonnage production. It must be remembered that the tonnage production of kaolin, paper and ball clay was larger in 1919 than in 1918 as shown by last year's report.

FUTURE LOOKS BRIGHT

We cannot expect or even hope for such increases as these every year and it would be well for every one interested in the mining or manufacture of clay to study these figures carefully. Take an average between the results of 1920 and those of 1921 up to date. The bottom has been reached and we ought to realize that if the next twelve

months will produce an average or mean between 1920 and the past months of 1921 the future holds a rosy prospect for all.

The imports of clay in 1920—403,580 short tons, valued at \$4,008,669 at the principal markets of the countries from which the clay was exported—increased 97 per cent. in quantity and 86 per cent. in value, as compared with 1919.

Percentages Increase or Decrease of 1920 Compared With 1919

	Gross quantity	Gross value	Av. price per ton
Kaolin and paper....	+ 41 %	+ 44.7%	+ 2.5%
Slip	+233 %	+308 %	+22.5%
Ball	+ 35.9%	+110.4%	+33 %
Fire	+ 40 %	+ 86.3%	+33.6%
Stoneware	+ 38.5%	+ 82.5%	+31.8%
Miscellaneous	— 16.7%	— 30 %	—16 %
Totals	+ 33.7%	+ 70.9%	+28.1%

There was an increase in both the quantity and the value of every kind of clay imported. Kaolin or china clay rose from 180,592 tons, valued at \$1,965,393, in 1919, to 361,800 tons, valued at \$3,568,677 in 1920. The imports of kaolin in 1920 were ten per cent. greater than those in 1914, the year of largest imports prior to 1920. The average price per ton was \$9.86, as compared with \$10.88 in 1919. This price,

CLAY MARKETED IN 1919 AND 1920

Kind	1919 (estimated)			1920 (estimated)		
	Quantity (short tons)	Value	Average price per ton	Quantity (short tons)	Value	Av. price per ton
Kaolin and paper.....	187,000	\$1,648,000	\$8.81	264,000	\$2,385,000	\$9.03
Slip	3,000	12,000	4.00	10,000	49,000	4.90
Ball	93,000	637,000	6.85	145,000	1,340,000	9.24
Fire	1,715,000	4,143,000	2.42	2,400,000	7,720,000	3.22
Stoneware	65,000	137,000	2.11	90,000	250,000	2.78
Miscellaneous	300,000	500,000	1.67	250,000	350,000	1.40
	2,363,000	\$7,077,000	\$2.99	3,159,000	\$12,094,000	\$3.83

CLAY IMPORTED IN 1919 AND 1920

Kind	1919		1920	
	Quantity (short tons)	Value	Quantity (short tons)	Value
Kaolin or china clay.....	180,592	\$1,965,393	361,800	\$3,568,677
Common blue and Gross Almerode.....	4	133	6,837	157,201
Unwrought or unmanufactured.....	23,759	187,550	34,252	272,524
Wrought or manufactured.....	498	4,262	691	10,267
	204,853	\$2,157,338	403,580	\$4,008,669

however, which is the price abroad, is only a fraction of the price of foreign clay in New York, where, in 1920, imported kaolin was quoted as high as \$25 a ton. Only four tons of common blue and Gross Almerode clays, valued at \$133, were imported in 1919, but in 1920 the imports of these clays increased to 6,837 tons, valued at \$157,201. This was only a little more than one-fourth of the imports of these clays in 1913, the year of maximum imports. The imports of unwrought or unmanufactured clay, which is thought to be chiefly English ball clay, were 34,252 tons, valued at \$272,524, an increase of about 45 per cent. in quantity and value.

EXPORTS

The total quantity of clay exported in 1920 was 120,160 tons, valued at \$1,168,399, an increase of 75 per cent. in quantity and 128 per cent. in value. Fire clay, the only kind designated, constituted 45 per cent. of the clay exported.



Coal Prices in Various Fields

The "Black Diamond," in its August 27 weekly review of the coal markets, writes:

"Such changes as were to be noted in the coal market during the past week were so slight in degree and scattered in effect that, generally speaking, it can be said that conditions remain practically unchanged."

The prices in the several Illinois districts range as follows:

Southern Illinois, including Saline, Franklin and Williamson counties, domestic sizes, \$3.50 to \$4.05; mine run, \$2.75 to \$3.40; screenings, \$1.25 to \$2.85; steam sizes on contract, \$2.60 to \$3.85.

Indiana fields, prepared sizes, \$3.25 to \$3.50; mine run, \$2.25; screenings, \$1.15 to \$1.75.

Central Illinois, prepared sizes, \$3.25 to \$3.75; mine run \$2.50 to \$2.75; screenings, \$1.25 to \$2.25.

Peoria district, prepared sizes, \$3 to \$3.50; mine run, \$2.75, screenings, \$1.25 to \$2.25.

Spring Valley, six-inch chunks, \$4.50; on contract, \$4.25; washed screenings, on contract, \$3.85.

In the St. Paul and Minneapolis districts wholesale and retail prices remain about the same, and there is a noticeable decrease in price cutting.

Pittsburgh and Cleveland also report practically no change in the situation in the past few weeks. In Columbus the prices on Hocking seem a little softer, with lump at \$3.25, run of mine at \$2.15 to \$2.50, and nut, pea and slack at \$1.35 to \$1.50. Pomeroy lump is strong at \$3.50, and Island Creek West Virginia four-inch lump is being offered in this market at \$2.75 and \$3. All these prices are f. o. b. mines.

At Charleston, W. Va., the prepared sizes are not bringing much over \$2 per ton. Some buyers are ordering good slack at \$2 rather than mine run at \$1.50 or \$1.75. At Fairmont, W. Va., the same condition prevails, with the prepared sizes running about \$2.50 and higher. Wheeling, W. Va., reports mine run at about \$2.25 and slack at about \$1.70. Prepared sizes are \$2.40 and higher.

In the eastern district conditions are practically the same and prices at New York are as follows:

"Pool Nine can be freely obtained at \$2.25 per ton at the mines. In some cases, distress lots of this grade can be bought for ten cents a ton under this quotation. Pool 10 is quoted at the range of from \$1.90 to \$2.10, according to the road on which it originates. Pool 11 ranges from \$1.70 to \$1.90. The best grades of gas coals from the western Pennsylvania regions sell at \$2.35 to \$2.50 for run of the mine, and \$2.75 for screened. From the Northwestern West Virginia fields, Pool 34 sells at from \$1.40 to \$1.70. Slack is not so plentiful, due to the very limited demand for screened

coals, and many consumers, unable to obtain it freely, are taking run of the mine in its place, as there is very little difference in the quotations."

In Philadelphia quotations are: Pool No. 1, \$3 to \$3.50; Pool No. 9, \$2.40 to \$2.75; Pool No. 10, \$2.20 to \$2.30; Pool No. 11, \$1.85 to \$2; Pool No. 34, \$1.60 to \$1.85; Pool No. 64, \$1.75 to \$2; Fairmont slack, \$1.80 to \$1.90; Westmoreland slack, \$1.75 to \$2; Fairmont lump, \$2.35 to \$2.50; Westmoreland lump, \$2.75 to \$3; Fairmont run of mine, \$1.75 to \$2; Westmoreland run of mine, \$2.35 to \$2.50.



Show Films Regarding Paving Brick

First run of the moving picture films, showing the manufacture and laying of paving brick, which were taken early in the summer, was held by the Bureau of Public Roads, Department of Agriculture, at Washington last week. The inspection was held for members of the trade and government officials interested in the work at the request of Editor Fairbank, of the bureau. All the pictures are clear and distinct, showing the operations in a splendid way, and are full of action. There are some scenes yet to be taken, and these probably will be developed during September. Sub-titles will carry the action of the pictures, without the need of a story. The series is expected to be completed in time for distribution early in the college, school and association meeting season.



Meeting to Standardize Paving Brick.

Elimination of excess varieties of paving brick, a move that has been under consideration by government, engineering and manufacturing interests for a long time, received its first definite consideration at a special meeting called at the request of the United States Department of Commerce at Washington, August 30. The paving brick industry had already appointed a committee to represent the manufacturing branch of the industry at this meeting.

Representatives at this gathering included S. W. Stratton, chief of the Bureau of Standards; E. W. McCullough, manager of the fabrication department of the Department of Commerce; E. J. Merrin, editor, "Engineering News-Record," representing engineering factors; officials of the Western Paving Brick Manufacturers' Association; and individuals prominent in the paving brick production end of the industry, appointed by and including O. W. Renkert, Metropolitan Paving Brick Co., Canton, and president of the National Paving Brick Manufacturers' Association; R. T. Hutchins, Mack Manufacturing Co., Wheeling, W. Va.; W. M. Lasley, president, Southern Clay Manufacturing Co., Chattanooga, Tenn.; Spencer M. Duty, Medal Paving Brick Co., Cleveland; F. W. Lucke, F. W. Lucke Co., Chicago; E. L. Middleton, of the Barr Clay Co., Streator, Ill., and president of the Illinois Paving Brick Manufacturers' Association; F. G. Matteson, Purington Paving Brick Co., Galesburg, Ill.; and Maurice B. Greenough, secretary of the manufacturers' association and of the committee.



Throwing Light on the Farmer's Condition

(Continued from editorial page)

liquidation of other commercial paper is directly influenced by the clearance first, of the farmers notes and credit accounts.

Clay products manufacturers should champion the farmer and defend him in any misguided reference to his losses and small crops. Figures are given in another article appearing in this journal showing the true light of the farmer's situation. A restriction of credit to the farmer means not only an obstacle to the progress of general business but affects many clay products manufacturers directly inasmuch as the farmers buy millions of dollars worth of clay products annually.

GETTING BEST SERVICE *from* YOUR MOTOR TRUCK

Keeping of Mileage Records Important—Use Care in Selection of Truck—Hints on Operation and Accident Prevention

By P. L. Sniffin

OBVIOUSLY the length of a motor truck's life, expressed in the number of miles traveled, is the one factor that proves a good truck selection and a successful maintenance system.

Motor truck manufacturers and users alike are growing to a full realization of the importance of this factor of mileage life as a basic principle of buying and selling. To the manufacturer it means building a long mileage life into the truck, establishing a reputation for mileage longevity and then pointing to established records as a selling argument. To the prospective buyer in the clay products field it means looking to mileage records made in the hauling of clay products.

JUDGING MILEAGE RECORDS

This matter of judging mileage records by placing emphasis on the buyers' line of business is an important one. As one writer expresses it, "In the past, motor truck buyers have entertained the idea that they are buying so many motor truck miles. In other words, they have been inclined to accept statements based on mileages run, regardless of the conditions under which the motor truck may have established such a record when operated. A motor truck, like a human being, will endure only in accordance with the severity of the work performed, the conditions under which that work is done, and the treatment it receives."

Take, for instance, a high grade motor truck—one that embodies the best of materials and skillful workmanship. Keep this truck, running over smooth roads, do not load it beyond its rated capacity, drive it carefully, lubricate it perfectly and keep it clean. It will then build up a surprising mileage life—far beyond the expectations of either the manufacturer or the user.

But subject it to the reverse of these conditions—rough roads, over-loads, poor driving, inadequate lubrication and careless maintenance—and it will be a worthless pile of junk in an exceedingly short time. Yet, in the latter case, the poor record established is no fault of the truck, altho in many cases it might be thought to be.

VISUALIZE THE CONDITIONS

If the truck purchaser will visualize the varied conditions that surround truck operation, falling anywhere between these two extremes, he will realize the necessity for basing a selection upon mileage records that were established under conditions that are similar to his own.

One transportation engineer in the employ of a motor truck manufacturer gives the following advice to prospective purchasers with reference to selecting a truck on a basis of mileage life:

"There is nothing mysterious, nothing complicated or difficult to understand about this method of buying and selling. It is simply an application of the most common sense method

of analyzing the productive capacity of any machine. It embodies one of the most fundamental principles of transportation engineering.

"The benefits to be gained from this improved practice depend largely upon your intelligent consideration of the performance evidence when submitted. Consequently, intelligent buying does not depend upon the possible mileage record which a motor truck is capable of establishing under the most favorable conditions. Neither does it depend upon the oil consumption in any specific case, nor the gasoline mileage obtained, unless those figures are judged fairly and squarely in the light of the conditions under which they were established. Such a method of analysis is your shortest cut to a truck purchase totally devoid of disappointment."

Switching to another phase of motor truck operations let us consider one of the most important items in the operations of a motor truck, the prevention of accidents.

HOW TO PREVENT ACCIDENTS

It is understood, of course, that the clay products manufacturer is held responsible for any damages resulting from accidents in which his motor truck drivers are at fault. The driver is legally the truck owner's agent while he is engaged in making deliveries or in performing any duties for which he is paid. Consequently it is extremely important that the employer take every precaution to see that his drivers are informed of methods by which accidents may be avoided.

Innumerable instances could be cited where the negligence of a truck driver resulted in an accident that caused a loss of life or other serious consequences. It is surprising but true that many times the owner of a fleet of trucks has been sued for such large amounts that his business has been imperiled by the large cost of settlement.

Many fleet owners and owners of one or two trucks carry insurance to cover this risk, and it is hardly necessary to emphasize the advisability of this. But on the other hand, a great many do not, or at least, do not have full coverage.

Whether insurance is carried or not, it is more than worth while to avoid the cost or inconvenience by "locking the barn door before the horse is stolen."

The following is a list of "Don'ts" which, if carefully observed, will minimize the risk of accidents. The list has been compiled by a prominent authority on motor transportation.

1. Don't cut corners.
2. Don't "cut in" short after passing a vehicle.
3. Give the proper signal whenever your action in starting from the curb, in turning, in changing your course or in stopping may reasonably be said to affect other traffic.
4. Don't consider driving at maximum speed within the law—the legal speed is a safe speed at all times.
5. Don't turn except at corners in business districts and close, built-up sections.

6. Don't pass street cars discharging passengers closer than six feet, or at a greater speed than 10 miles per hour.
7. Don't attempt to pass a vehicle if there is another vehicle approaching from the opposite direction unless the road is clear for 100 yards.
8. Don't drive your car out of the garage without knowing your brakes and steering gear are right and your headlights comply with the law.
9. Slow down when you observe children playing near the curb or in the street. Remember, they have not the wisdom of an adult.
10. Don't expect the pedestrian to know the road-rules.

PASTE THIS LIST IN YOUR TRUCK CAB

When it comes to reminding the truck drivers of their obligations in handling and taking care of an expensive piece of equipment, hardly a better method has been found than that of pasting a neatly printed card containing a few pertinent reminders inside the truck cab.

An excellent example of such a reminder is shown herewith as it has been successfully used by one fleet owner. It will be noted that it does not contain so many instructions that it will appear superficial to the driver. The important points of proper maintenance are suggested in a brief and logical manner.

GIVE YOUR TRUCK A CHANCE

This truck represents an investment of a considerable sum of money. It is entrusted to your care. Honesty and self-respect demand that you give it a chance.

LUBRICATE IT REGULARLY AND THOROLY.

Refer to Lubrication Chart daily.

KEEP THE MOTOR CLEAN.

DO NOT NEGLECT THE VALVES.

Check them carefully whenever you notice lack of compression. If valves do not seat perfectly you cannot get full power, and there will be an increased consumption of gasoline and probably burnt valves and valve seats.

DO NOT NEGLECT MINOR REPAIRS OR ADJUSTMENTS.

CAREFULLY EXAMINE STEERING AND BRAKE RODS DAILY.

DO NOT TAMPER WITH THE GOVERNOR.

If you do, you cancel the guarantee, and, sooner or later, will get your truck into trouble.

DRAIN THE CRANK CASE AT LEAST ONCE A WEEK.

It is economy to use high-grade oil.

DO NOT RACE YOUR MOTOR.

NEVER IDLE YOUR MOTOR UNNECESSARILY.

It results in excessive carbon, trouble and expense.

DRAW UP ALL LOOSE BOLTS.

Never neglect a rattle—fix it at once.

THIS TRUCK SHOULD BE INSPECTED EVERY THIRTY DAYS BY A COMPETENT MECHANIC.

TRAVEL SLOWLY OVER ROUGH ROADS.

DO NOT OVERLOAD.

The warm weather is practically over with it would not be amiss to give a few hints regarding the care of the motor truck during the hot days.

Just as it is necessary to conform your own individual manner of living—your wearing apparel and perhaps your diet—to the coming of warmer weather, so it is necessary to see that

your motor truck is put in condition to give its best service during the summer months.

The comparatively small amount of effort expended in going over the various parts at this time is well worth while in the interests of saving needless expense and delay later on.

There are two considerations to be kept in mind. First, the preparation of the truck for summer weather and second, the treatment and care of the truck when hot weather comes.

CHANGE THE CARBURETOR ADJUSTMENT

At the beginning of a season of hot weather it is ordinarily necessary to change the carburetor adjustment, that for summer being usually a trifle leaner than that for winter. Overheating is sure to result if the carburetor is improperly adjusted. Great care should be taken that the adjustment when made is correct and then it should be left alone. It is impossible to maintain the proper carburetor adjustment if the driver tinkers with it every time the engine shows the least irregularity of running.

Timing has an important bearing on cooling. In hot climates where temperatures are excessive for a considerable part of the year, the engine may be made to run cooler, but at a slight sacrifice of power, by setting the camshaft one tooth ahead (earlier) on the timing gears, so that the exhaust valves open earlier.

USE HIGH GRADE HOSE CONNECTIONS

Only the best of rubber hose should be used for the water connections. The inside tubing of cheap hose is apt to dissolve, the rubber particles being carried along with the water and clogging up the radiator. Hose without rubber inner lining is apt to give trouble from the fabric coming loose and flapping over the opening, shutting off the water.

In the spring it is well to go over the hose connections carefully as some anti-freeze solutions have a deleterious effect upon the rubber.

See that the flow of water is not impeded by any sort of obstruction and that the overflow pipe is not bent below the level of the base of the radiator filler. Be sure that the overflow pipe is not clogged or flattened.

TUNE UP THE IGNITION SYSTEM

It is important to see that the ignition system furnishes a spark of sufficient strength. A weak spark, usually due to excessive lubrication of the magneto, dirty breaker or distributor or weak magnets, will have an effect similar to late spark timing and overheating will result.

Some truck owners make the mistake of obstructing the front of the radiator with license plates or signs. Good air circulation and clean radiating surfaces are as important as good water circulation. It is well to clean the outside of the radiator well before the hot spell.

Adjustment of the valve tappets is also important. It is generally agreed that they should have from .008 to .010 inch clearance. This, however, may be gauged satisfactorily by making the clearance the width of an ordinary post card.

It should be remembered that about 40 per cent. of the heat of combustion escapes thru the exhaust and that, therefore, it is advisable to keep the exhaust and muffler clean. If any part of the exhaust system is obstructed, the cooling water will be called upon to carry off some of this heat. This, naturally, will raise its temperature. A careful investigation of this matter is to be especially recommended.

THE FAN, CRANK CASE AND OIL

Be sure to see that the fan turns easily and that the belt tension is correct. A good test of the tension is to turn the fan by hand with the engine not running. If it is possible to

slip the belt easily, but not possible to spin the fan, then the tension is right. The fan should be cleaned and well greased at the beginning of summer and kept in this condition always.

Clean the crankcase well at this time. Drain and refill with the best quality oil. Keep the outside of the reservoir walls clean as this helps to keep the oil cold.

The average working temperature of oil in summer is higher than in winter and so oil of the same body will be thinner. Sometimes it is advisable to use a grade heavier oil in summer. In excessively hot spells an especially heavy grade of oil may be required to maintain the oil at the proper consistency in operation. When a heavier oil is used, care should be taken not to work the engine too hard before it is warmed up.

* * *

C. and O. Announces Freight Reductions

A voluntary reduction of 15 per cent. on all intrastate freight rates on building supplies was announced by the Chesapeake & Ohio Railroad recently. The new tariff became effective August 22 replacing those in force since August of 1920. The new rates will apply only to those shipments originating within the state and consigned to points in the same state.

It is a general belief that this reduction will have a material effect in stimulating construction, especially in the state of West Virginia.

* * *

Capitalizing On An Ugly Product

Probably every advertising man knows that if there is anything unusual about the product he is advertising, that is the thing to harp on and tell about. The Sumter (S. C.) Brick Works is doing this thing with its product known as "Airedale" brick. The feature of these brick is their extreme homeliness and so they are advertised as "so darned ugly they are beautiful."

AIREDALE BRICK
 Like Airedale Dogs
SO DARNED UGLY
THEY ARE BEAUTIFUL
 They have real class and can't be imitated
SUMTER BRICK WORKS
 SUMTER, S. C.
"Are You from Dixie? - - - Our Brick Are."

The Way the Sumter (S. C.) Brick Works Advertises Its Products. It Is Bound to Draw the Reader's Attention.

"Airedale" brick have acquired a considerable reputation thruout almost the entire country and it is nothing unusual for the company to secure an order for its brick from a distant city in the North or East. An order was recently received from Cincinnati for 50,000 face brick for a residence in that city. In spite of the expense of shipping and the close proximity of some of the finest face brick plants in the world the order was given the Sumter Brick Works. In addition to "Airedale" brick the company is also the producer of the famous "Dixie Texture" face brick which is known everywhere.

* * *

Regarding Degree of Ceramic Engineer

In connection with a brief comment regarding the Department of Ceramics of the Ohio State University, Columbus, Ohio, in *Brick and Clay Record*, issue of April 19, it was stated that this is the only Department of Ceramic Engineering

authorized to confer the degree of Ceramic Engineer.

A letter to the various universities teaching ceramic engineering, of which there are five, brought replies which show that the Ohio State University, Iowa State College, Rutgers College, New York State School of Clayworking and Ceramics, and the University of Illinois, all confer the degree of Bachelor of Science in Ceramic Engineering upon their regular four year course graduates.

The Iowa State College confers the degree of "Ceramic Engineer" as a professional degree. It is granted only to those students who have had at least five years experience after graduation in a responsible professional position and who have submitted to the dean of the graduate college and other authorities concerned, an acceptable thesis.

The University of Illinois besides conferring the degree of Bachelor of Science in Ceramic Engineering or Bachelor of Science in Ceramics, confers the following degrees: Master of Science in Ceramic Engineering or Ceramic Chemistry at the completion of one year of graduate work. The degree of Doctor of Philosophy in Ceramic Chemistry is given on the completion of three years' graduate work including a thesis.

Charles F. Binns, director of the New York State School of Clayworking and Ceramics, states that the degree given at the Ohio State University is Engineer of Mines in Ceramics. Moreover, he states that there is a feeling in educational schools that the degree of engineer occupies a position analogous to an advanced degree such as Master of Arts, or Doctor of Philosophy, and that no one graduates from a baccalaureate course as engineer, simply because he is not an engineer and cannot be without practical experience. He may well be a Bachelor of Engineering, which means that he is on his way but has not yet arrived.

* * *

Publishes Valuable Book on Common Brick

The third edition of the book "How to Build and Estimate" has been published by the Common Brick Manufacturers' Association. The book is much more complete than the previous editions and contains a wealth of information regarding practically every detail of common brick construction. It is of real value to everyone connected with the building industry, architect, contractor or owner, as it tells how to use common brick in a building. The thickness of walls, basement construction, pier construction, chimneys, partitions, floors, in fact the best practices regarding every phase of the construction of a brick building are outlined in detail.

Many uses of brick other than in buildings are described, for instance, sewers, septic tanks, manholes, garden walls and walks and other uses for brick are recommended. The book is freely illustrated with actual photographs, drawings and details showing the different purposes for which brick is used.

One chapter is devoted to the materials used in brick construction. A very complete description of the various materials which are most commonly used in mortar is given. The qualifications of cement mortar and lime mortar are discussed with advice regarding the proper use of mortar colors. The book also contains many tables regarding the structural qualifications of brick, such as compressive strength, strength of various types of piers, weight of solid brick walls, fire resistive qualities, and numerous others.

Considerable space is devoted to the Ideal wall, now familiar to probably every clay products manufacturer.

It is really an excellent book and the first work of its kind ever published. The Common Brick Manufacturers' Association says, "The purpose of this book is to give dependable information upon the use of brick and to afford a basis of cooperation between owner, architect, and contractor in accomplishing first-class results in brick construction."

Eight-Inch Brick Walls for Dwellings

The Building Code Committee of the Department of Commerce, Washington, D. C., recently formed under the direction of Secretary Herbert Hoover, is conferring with the National Board of Fire Underwriters with respect to the use of eight-inch brick walls in dwelling houses for the purpose of ascertaining whether such can be used with entire safety. Consideration, also, is being given to the use of similar walls in small commercial buildings, not exceeding three stories in height. At the same time, the Bureau of Standards is conducting a series of tests upon sample brick walls, and the results of this work are expected to be of particular assistance in determining the value of various wall thicknesses and behavior of brick walls in service.

As is generally known, the National Board of Fire Underwriters has advocated for some time a minimum thickness of 12 inches for all brick walls except in such parts of a city where frame construction is permitted. On the other hand, an examination of different building codes has shown that a large number of cities are permitting the use of eight-inch brick walls for one and two-story structures, and in some cases three-story buildings, irrespective of location. It is claimed that such construction is amply strong and that the walls of this size are serving their purpose with thoro satisfaction where now permitted; it is held that greater thickness for walls of such buildings is an uneconomical use of brick. The Building Code Committee is conducting this inquiry in connection with brick walls for its future general recommendations for the standardization of building codes.



COMMON BRICK MANUFACTURERS ASSOCIATION to ESTABLISH LABORATORY

ESTABLISHMENT OF A LABORATORY, where members will be able to obtain virtually every detail that they may desire to know about the brick they are making, is planned by the Common Brick Manufacturers' Association of America. This move was tentatively decided upon at the semi-annual meeting of the board of directors, held in Cleveland, Ohio, the past week.

The decision was made following reports by William Carver, association architect, showing what has been accomplished in the way of brick and brick wall tests thru the co-operation of the Bureau of Standards. Directors not only approved the continuance of these tests, but also the establishment of the laboratory if further consideration of this feature shows it to be feasible. Tests made include those of the Ideal brick hollow wall, the solid brick wall of same thickness, and the testing of the individual brick constituting these walls, to ascertain the ratio of performance of the individual brick in its relation to the wall.

WILL COMPILE TABLES

First step toward this laboratory program probably will include the selection of four different kinds of common brick, which will be subjected to tests that will show crushing, transverse, and tensile strength and absorption qualities. From these tests a series of tables will be compiled, which members of the association may use to arrive at their own conclusions regarding their own brick. However, if the theory of these tests proves correct, and the laboratory is established, members of the association may send their brick to the laboratory for such tests.

The directors' meeting at Cleveland, Ohio, was one of the most enthusiastic in the history of the organization. Twenty members of the board were present, the only absentees being W. E. Dunwoodie, Macon, Ga., who was prevented from attending by an accident to his partner, E. T. Coleman and W. K. Hammond, New York City, who was detained on account of illness in his family.

The members met at Hotel Cleveland. President C. H. Bryan, Detroit, outlined the program of the association for the coming year, and E. S. Barkwill, Cleveland, showed the organization to be strong financially.

APPROVE JOINT RESEARCH COMMITTEE

Warren Griffiss, of Baltimore, Md., of the Joint Research Committee of the affiliated clay working associations, detailed the plan of investigation and the plan of financing the new body.

The work of the research committee was highly approved by the directors of the common brick organization.

Secretary-Manager Ralph P. Stoddard reviewed the work of the association during the last six months, and outlined plans for activities during the coming year. Mr. Stoddard's report showed excellent results from contact with the Department of Commerce and the investigation of the national building code committee. Results already obtained by the promotion of the Ideal brick wall idea, and the business that members will get from it, were received with satisfaction by the members. The program of publicity along this and other lines likewise was approved.

Date and place of the next convention of the Common Brick Manufacturers' Association of America was decided at this meeting. It will be held at St. Louis, January 30-February 1. This convention will be exclusively for common brick manufacturers, but it is the hope of the directors that the convention of the National Brick Manufacturers Association will be held immediately following the common brick gathering, in order that those who are members of both organizations can attend both conventions. Officials of the common brick manufacturers will notify the National organization officials of this idea.

OBJECT TO PRISON MADE BRICK

Move toward stamping out what some members assert is becoming a wide spread evil in the industry, was decided upon at this meeting of the directors. This is the commercial competition of prison made brick with the material that comes thru the regular channels. Data submitted at this meeting from different states in the country showed that big inroads upon the brick manufacturers' business have been made by brick that can be submitted at far below manufacturers' production costs. Several members present substantiated the claims of those sending in this information that the manufacturers cannot pay the wages demanded and compete with the free convict labor brick. B. F. Weber, Chicago, will present a resolution covering this phase of the situation at the convention next January, at which time it is probable that a plan for combatting the evil will be decided upon.

Most of the members of the board remained in Cleveland for several days. One of the features of their visit was a trip to the plants of the Cleveland Builders Supply & Brick Co., as guests of Mr. Barkwill and other officers of the company.

The BUILDING SITUATION

THE BUILDING SITUATION continues to improve in the leading industrial centers in the New England district, and good sized building contracts are being let for immediate operation. The middle of August shows contract awards aggregating \$3,912,816 in this section, as compared with \$5,490,000 in the corresponding week of a year ago.

The Waldo Brothers & Bond Co., Boston, one of the leading mason material dealers in this vicinity, takes an optimistic viewpoint of affairs and expresses the opinion that the new work now being figured and projected will keep the industry in this section busy thru the winter and well into next spring.

A MARKET OF FIRM TONE

The New England Brick Co., Boston, is quoting common, sand-struck brick at \$17 a thousand, delivered in the city. Other grades of common varieties are selling at higher figures, New York stocks being held at \$20 a thousand, and high grade Connecticut production at \$22. Selected water-struck brick is listed at \$30 and \$31, delivered. Face brick holds at from \$45 to \$55 a thousand, a good rough texture product being securable at \$50.

Terra cotta partition blocks, 4x12 in., are \$150 per thousand, while 8x12 in. material is selling for \$280. The market in fire brick holds up well, with regular No. 1 material priced at \$60 and higher grade selections, \$70.

Industrial work is growing in Rhode Island and with housing operations also coming forward in larger volume, substantial building totals are being recorded.

COMMON BRICK HIGH IN PROVIDENCE

Common brick has rather a wide range at Providence, R. I., selling from \$25 to \$30 a thousand, delivered. Fire brick, No. 1 standard, holds at \$80, with higher grade refractory material priced at \$100. Clay tile partition blocks, 4x12 in., are \$220 a thousand, and 8 in. material, \$390. Drain tile, 3 in., is selling at 12 cents per ft., and 4 in., at 16 cents. Flue lining, 5½x8½ in. is quoted at 45 cents a ft., while larger sized material, 8½x13 in., and 13x18 in. are being sold for 67 cents and \$1.31 a ft., respectively.

HOUSE CONSTRUCTION LEADS AT NEW YORK

The past fortnight has brought a remarkable revival in dwelling work in Bronx Borough at New York City. During one week, plans were filed for about 100 residences, breaking all records in that district. A large number of the homes are of two-story brick type, and there is growing popularity in dwellings of this character. Brooklyn borough is also continuing strong in the housing line, while Manhattan Borough is giving particular attention to large multi-family apartments. An interesting development in the latter borough is the approval of a building program for the coming year by the Board of Education, covering the construction of 43 new school buildings, practically all of brick, at an estimated cost of \$25,000,000. The project includes 34 elementary schools, eight high schools and one vocational school building.

MATERIAL MARKET ACTIVE

Common brick in the New York market is very firm at \$15 a thousand wholesale, along side dock. The slight variation in this level, evidenced in the early weeks of the summer, has given way to a growing strength that indicates an advance in price, probably by a dollar a thousand, in the near future. At least, with present operating costs, this is the way that manufacturers are talking, and an increase would not be unexpected. Inquiries for future deliveries are good, and the entire market situation is one of great encouragement.

During the month of August, up to and including August 27, a total of 150 cargoes of common brick have reached the city from the Hudson River yards, and exactly this number have been disposed of. The end of each week has shown the wholesale market entirely sold out; loads are practically being sold in transit. Second-hand brick is moving well at \$45 a load of 3,000, delivered.

FACE BRICK DEMAND INCREASES

The call for face brick is upwards; apartment houses now in course of erection are absorbing sizable quantities of the material, with the lighter shades of grays and buffs decidedly the more popular. The price range maintains at \$45 to \$55 a thousand, reds and colonials being quoted at the lower level.

Fire brick is operating under a variable demand, and the spotty market condition can be attributed to the lack of industrial building. The majority of distribution is for alteration and repair jobs. Prices hold at \$70 and \$75 for first grade material.

Declining costs of construction are helping the situation materially, in the Newark, N. J., district. A four-story brick apartment is now averaging about 38 cents a cu. ft. for erection as compared with a figure of 50 cents in 1919. In the matter of two-family dwellings, the current cost approximates \$12.50 per sq. ft. of ground area as against \$15 in 1919 and 1920.

MATERIAL PRICES STEADY

Hudson River commons arriving at Jersey City, N. J., are being held at \$17 a thousand wholesale, with \$20 and \$21 asked by dealers. At Newark, the same material is held at \$21, delivered, while Hackensack brick, quite abundant there, are priced at \$20 and \$21. The same figures hold for local production at Trenton, with manufacturers asking \$17 at the kiln. This latter figure seems susceptible to advance and is likely to change as the fall season progresses.

The popularity of tapestry brick veneer for house construction is developing a better market for face brick, and dealers report a volume of inquiries for early future work that bids fair for marked increased business. Prices range from \$45 to \$58, according to selection, the rough texture brick easily leading in point of call. Fire brick is holding its own at \$70 in the important cities, altho manufacturers at Trenton are asking \$75 and \$80 to regular trade among the potteries and industrial plants, and are getting it.

PHILADELPHIA TAKES ON ACTIVITY

Philadelphia seems to be coming into its own in the matter of construction work, and the settlement of the building strike is bringing about a far better sentiment. Speculative builders, industrial interests and the city, itself, are coming into the market for materials, and leading material dealers are preparing for a large distribution during the fall season.

Building costs have declined about 20 per cent. in Philadelphia as compared with spring quotations, and close to 100 per cent. in comparison with immediate post-war figures. With lower wages and the open shop, labor is becoming more stable, and a prominent local builder says that a good bricklayer is now laying about 25 per cent. more brick in a day than at this time a year ago.

During the past fortnight there has been a marked increase in the number of plans filed for dwellings, with two-story brick structures well ahead of all others. The Board of Education has taken bids for a new brick school to cost about \$370,000. The bids received on this latter structure show an

average of 32 cents a cu. ft. erected, as against 39 cents for the same type of construction last spring.

IN THE MATERIAL MARKET

Prices show no change in the Philadelphia district. Producers are holding common brick at \$20, delivered, and anticipate increased business, based on current inquiries for early future deliveries. Production is being held at a good point, and stocks are more than sufficient for any immediate call. Present distribution is said to vary from 25 per cent. upwards of normal.

Face brick maintains at levels of \$42 to \$55 a thousand, and the only hope of any decline is in lower freight rates. The high cost of transportation is going far to limit sales and distribution; the average price is more than double for freight on a 1,000 brick from the face brick manufacturing sections of the state, as compared with 1914 figures.

The fire brick market is rather slow, with prices holding at \$70 and \$75 a thousand, delivered. Clay partition tile shows no change, with a \$200 level for three-inch material quite well established.

WILMINGTON PUSHES AHEAD

The city of Wilmington, Del., has shown marked gains in construction operations during the past two months, and there is an increasing call for supplies at the present time. Local yards are selling common brick at \$21 and \$22 a thousand. Face brick is averaging around \$50, and fire brick at \$75 and \$80.

Burned clay products have come into particular prominence at Baltimore, Md., during the past fortnight, following the appointment of a committee composed of 12 local architects engaged in school work to develop standard specifications for absolutely fireproof schools in all future construction in the city. Among the list of recommendations is that all stairways shall be in fireproof, smokeless stairwells, and hollow tile, naturally, will be in wide call for this feature. A construction program of \$5,000,000 for new schools is being arranged.

CLEVELAND SITUATION IMPROVES

The building situation in and near Cleveland, Ohio, shows a change for the better as fall approaches. More large construction projects continue to come up, conspicuous among them being a new sixteen-story commercial building by the Investors Properties Co., a similar large building to be known as the Pythian Castle and Office Building. Principal outlet for building material still is in the public work direction, as hardly a week passes that does not include a school hospital or similar project by either Cleveland or nearby communities. These jobs range in value from \$50,000 all the way to a quarter of a million dollars each.

On the other hand both large and small residence work is being curtailed, thru lack of financing, and public opinion being that both materials and labor are still too high. Factories and other industrial construction show signs of revival.

Leaders in the building industry agree that the biggest boost that the building industry can get here is sanctioning of the Public Square Union Station by the Interstate Commerce Commission, which body has agreed to heed the pleas of the backers and public in a rehearing of the program.

PRICES STILL DROPPING IN COLUMBUS

The price and labor situation in Cleveland are practically stationary and indications are they will continue so. The new low level for clay building materials, established at the beginning of the summer, still holds, on the basis of \$15 for common brick. Tile, face brick and similar materials are held at the levels then established. The new wage scale adopted following the strike last May will hold until early next year, and with few exceptions, labor's production is greater.

In Columbus, Ohio, and the district surrounding, building

is proceeding at a very ordinary pace. Prices on both common and face brick continue to decline in Columbus and central Ohio territory. Common brick, of the soft mud variety, are bringing delivered on the job \$15.50 while shale brick are about \$1 higher. Face brick are sold between \$26.50 and \$35 per thousand, depending on the quality.

BUILDING CONTINUES FAIR IN SOUTH

The construction figures for the south are not startling they are nevertheless of a sufficient volume to insure a fair amount of business. According to the "Manufacturers' Record" the total amount of construction in the south for the last four weeks is \$91,500,000.

Thruout Georgia the construction of homes is on the increase and in Atlanta especially a home building boom is the feature of the construction situation. The number of permits issued in that city during 1920 bids fair to be exceeded by nearly double this year. To date there have been issued a total of 741 permits for residences as compared with a total of 552 for the entire year of 1920.

HOME BUILDING BOOM HITS CHICAGO

The building situation in Chicago and the Chicago district is becoming somewhat more active but the bulk of the work seems to be held off pending the decision of Judge Landis on wages of building trades. Judge Landis has been endeavoring since the beginning of the summer to clear the muddle of the wage situation and there is little doubt in the minds of the employers and the trades that he will be able to adjust matters on a satisfactory basis in the near future.

A good quantity of work of sizable character is available, tho the smaller buildings predominate. As is the case in most sections of the country the greater proportion of construction in the Chicago district is of habitationl character. The speculative home builder is beginning to be active, and especially in the suburbs and outlying districts is more or less boldly entering the market.

Figures just given out by the building department of the city of Chicago show that the total permits issued for the month of August, 1921, exceed those for the same month in any of the last seven years. The figures indisputably indicate that a building boom in residence construction has begun. One thousand fifty-one permits were issued for a total cost of \$13,163,010, whereas last year the permits for August numbered but 308 for a total amount of \$5,521,000, and the total for

Building Permits	
Forty-one permits were issued yesterday of which the following were for \$10,000 or more:	
Briar-pl., 532-42, nine story brick hotel; Briar Building corporation, owner; Paul Hansen, arch.; H. C. Jensen, mason; Agnar Andersen, carp.	\$1,250,000
Ridgeway-av., N., 4900-08, 3 story brick flats; Max Kriesberg owner; Minchun Spitz, arch; A. Z. Elise company, mason; J. Siegel, carp.	55,000
Wellington-av., 3808, three story brick flats; F. W. Jansch, owner and arch.; A. C. Christenson, mason; O. E. Fischer, carp.	85,000
Sixty-seventh-st., E., 1418, one story brick garage; John W. Jackson, owner; W. H. Pruyn, Harrison-st., W., 3707, one story brick garage; W. F. Goldie, owner; John Breake, mason; Richard Stanek, carp.	28,000
Koerner-av., N., 3941, three story brick apartments; Lenth, owner; Founberg, Pince & Haulin archs.; Axel E. Johnson, mason and carp.	30,000
Harper-av., 5620, one story brick garage; Wagner brothers, owner; William P. Doern, arch.	25,000
Hoyne-av., S., 10314, two story brick residence; Donald S. McKinley, owner; Oscar L. McMurray, arch; W. McCumber & son, mason and carp.	12,000
Douglas-blvd., 3528, brick flats; A. Korschak, owner; Himmelblau, arch.; A. G. Ellison, maa.	18,000
Roosevelt-rd., W., 3638, one story brick store; L. Goldberg, owner; Fuhen & Isenberg, arch.; Douglas Construction company, maa.; A. Smith, carp.	13,500
Gresham-av., 3018, two story brick flat; Joseph Tryzinski, owner; A. Foeter, arch.; John F. Schrambelk, mason and carp.	12,000
Montana-st., 4937, two story brick flats; Fred Newberg, owner; James R. Morrison, arch.; J. Burke Coake, mason.	10,000

Reproduction from the "Chicago Tribune" Showing a Day's Building Activity in Chicago.

August, 1921, is three times as great as the 1919 total.

The accompanying reproduction of the section devoted to building permits in the Chicago "Tribune" shows that the construction industry in Chicago is far from dead. The most notable project on the list is of course the nine-story hotel to be built at a cost of \$1,250,000.

SAN FRANCISCO LABOR SITUATION ACUTE

The long drawn-out and regrettable strike among the building craftsmen of San Francisco appears to be nearing a crisis, because the housing shortage is in a serious state of affairs and the unemployment situation is veritably acute.

The Industrial Relations Committee has raised a fund of \$1,300,000 with which to bring outside workmen to San Francisco unless the American Plan is accepted by the unions. Already 6,400 men have been brought here and more will be sought unless the building trades agree to the following terms set down by the committee:

1. A 44-hour week; an eight-hour day with four working hours on Saturday.
2. A fixed wage until November 12, 1921, with no change in wages at any time except after a wage scale has been set by a wage board and after advertising and a thoro hearing

of individuals or representatives of both labor and employers.

3. The adoption of the open shop, without discrimination against union or non-union men.

DENVER BREAKS RECORDS

There is a steady demand for hollow building tile in the construction of residences and school houses in the cities and towns around San Francisco.

Construction in other parts of the West also continues at a good pace. Now and then a particularly encouraging report is received. During the first twelve days of August all records in Denver, Colo., were smashed for the number of building permits issued within any similar period, according to City Building Inspector Frank M. Ladd. Three hundred and five permits were issued during the twelve days, of which 43 were for brick residences only.

* * *

Large New Hotels

Contracts for the new \$1,000,000 hotel in Washington, Pa., have been awarded and construction work will be commenced at once. A similar project is being considered by Uniontown, Pa., capitalists.

OKLAHOMA ASSOCIATION DOING CONSIDERABLE ADVERTISING

Several issues ago, under the heading "A Complete Brick Home Delivered on the Job," *Brick and Clay Record* gave an account of the plan for the promotion of brick sales which the Oklahoma Clay Products Association is promulgating. "Service to the Builder" might well be the slogan of the campaign, inasmuch as the association assists the home builder in every phase of the construction, even the financing of the project.

Sunday newspapers are used as advertising mediums in boosting brick for home construction. The Ideal Wall is the basis of the Oklahoma Clay Products Association's plan of promotion, and, as shown in the advertisements reproduced here, the advantages of a brick home over frame construction at no greater cost are strongly harped on.

The advertisements shown here appeared in the Sunday issues of the *Daily Oklahoman*, *Tulsa World*, and the *Muskogee Phoenix*. Space will be taken in these papers every Sunday for twenty-six weeks and promoters of the scheme are optimistic over the results it will bring.

This advertising serves only as the foundation for individual effort. The various companies that are members of the association have the advantage of this publicity to help them in their sales efforts.

In addition to newspaper advertising, the association is publishing a little booklet giving fifteen reasons for building with brick. The reasons given are those known to every clay products manufacturer—beauty, permanence, economy, resale value, and so forth; they are designed mainly to instill the idea of owning a home of brick in the minds of the general public.

Build with Brick

A brick home may be built at no greater cost than a home of less durable material. Be sure you find out about brick before deciding what material shall be used in the exterior construction of your new home.

Listed below are just a few of the advantages to be derived from building with brick:

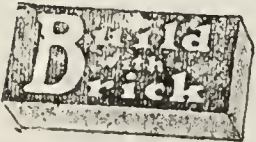
- eliminate repair costs
- very little depreciation
- cuts fire insurance cost
- cuts fuel cost in winter
- vastly cooler in summer

A brick home is the driest, most durable, most beautiful and most economical home you can build.

**Oklahoma Clay
Products Ass'n**

605 Tradesmen's National
Bank Building

OKLAHOMA CITY



FROM a standpoint of investment the brick bungalow is safest because of its permanency

During the first five years there is no depreciation on the brick bungalow and even after that it is only at the rate of 1% a year.

Contrast this with ordinary construction where depreciation starts from the time the building is completed and at the rate of 3% a year

Yet, with this advantage, the original cost of the brick bungalow is no greater than that of any less durable materials.

**OKLAHOMA CLAY
PRODUCTS ASS'N**
605 Tradesmen's National Bank Building
Oklahoma City

Build With Brick

Beauty of design may be an important consideration to you in the building of a bungalow, but permanence should be the biggest factor.

That's why a bungalow built of brick should be your choice.

Not only does this type of construction combine all the essentials of durability, comfort and safety, but also everything desirable from the standpoint of beauty

Yet, with the untold advantages brick offers over less durable materials, the cost is no greater

**OKLAHOMA CLAY
PRODUCTS ASS'N**
605 TRADESMEN'S BANK BLDG.
OKLAHOMA CITY

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

DECORATING WITH COLORED CLAY



BLENDING of two or three different colored clays as a thrower whirls his wheel, and thereby producing a piece of art pottery the identical companion piece of which can never be duplicated has been accomplished in a commercial way in only one pottery in the United States, that at Benton, Arkansas.

This pottery has a capacity of only three kilns, but it is producing at the present rate of operations between 75,000 and 100,000 pieces of art ware

While the shapes of these art pieces can be duplicated, it is a physical impossibility to secure the same blend of clays in any two items. The raw clays used in this art shop are found in thirty-five acres which the company owns, and on a part of which land the plant is located.

POTTERY CALLED "NILOAK"

Kaolin is a well known term in ceramics, but when the

word is "turned 'round" and made to read "Niloak," then one has the name of this Arkansas art pottery.

A potter in search of health, while traveling thru the Ozark region discovered clays of varied hues back in the days following the close of the civil war, and it was not long thereafter before a small one kiln pottery was built. This clay was found near where the little town of Benton, Ark., now stands, and in 1876 John Hyten, who up to that time, had been employed as a potter in a small stoneware shop in Iowa, traveled thru that particular section of Arkansas, and he too, took notice of the clay formation. John Hyten settled in Benton, and seeing the possibilities of developing such wonderful clays established the small, one kiln pottery, carrying on the business of making stoneware, which had been his trade. No thought had been given to the possibilities of artpottery.

In 1881 Mr. Hyten died, and C. D. Hyten, then a youth, being too young to operate the plant, the business was closed for a term of years. C. D. Hyten had two older brothers, and they leased the plant to one of the former employes who continued the business for a term. Paul and Lee Hyten decided to take over the business, which they did in 1889. The two brothers operated the pottery for about two years and then dropped it. Later both brothers left the state, and since then Paul Hyten died but the brother Lee is now residing in Ohio, and engaged in railroad work.

TAKES JOB IN SHOP OF OWN POTTERY

Still too young to enter business, C. D. Hyten leased the pottery to others and he himself took a job in the shop and



Some Samples of the Beautiful "Niloak" Pottery Ware Manufactured by C. D. Hyten, of Benton, Ark. The Streaks Are Made with Vari-Colored Clays.

there learned as much about the manufacturing of pottery as was possible in such a small plant, then far away from the active commercial markets of the country. But C. D. Hyten had a keen head and an eye on that which lies before him. Then in 1902 C. D. Hyten took over the plant and business himself, and for seven years continued the



C. D. HYTEN

exclusive manufacture of a line of stoneware. Thruout the southwestern territory the little plant had made a name for itself, but at the end of seven years, Mr. Hyten had learned more about clays than he had ever dreamed of.

Experiments with the varied colored clays of the Ozarks then began. Clays of several different colors were worked into a ball, cast upon the wheel and then the first piece of "Niloak" pottery was created and designed. It is not so much the shape of the item that has attracted the eye of the purchaser of this class of art ware, but the blended colors. It is impossible to create two pieces of ware possessing the same blends and stream lines of the different clays. The "marble cake" mother use to make is a concrete example of how the colored clays "run" in the making of this class of ware.

NO HAND DECORATING IS NECESSARY

While the ware after it is fired has an exterior bisque finish, the interiors of the pieces are glazed. By this plan, every item is "water tight," be it a vase or an inkwell.

This ware is fired up to about 2,100 deg. F. for from 36 to 48 hours, natural gas being used for all firing. There is no hand decorating. Nature itself has done this in the blending of the clays as the clay is worked thru a pug mill.

This plant which started business with one kiln now possesses three, and the main clay shop measures 40 by 140 feet. The warehouse covers a site 150 by 175 feet, and from 25 to 50 people are employed, according to the requirements and the seasons.

And this is the story of the "Niloak" pottery, having a niche in the business world all of its own, 'way down in southwest Arkansas.

Ocean Liners Use Much China

As an idea of the chinaware requirements of the largest ocean liners, there are, on one of the "Atlantic greyhounds" 20,000 cups and saucers; 22,000 dinner plates; 12,000 glasses and tumblers; and about 5,000 miscellaneous articles as egg cups, cruets, etc.

* * *

Ceramic Day at Chemical Exposition

As has been mentioned in previous issues of *Brick and Clay Record*, the Seventh National Exposition of Chemical Industries will be held in New York the week of September 12. Various ceramic exhibits and others of interest to the clay industry will occupy space. The American Ceramic Society will have an exhibit at booth No. 451, which will be used as a headquarters for members at the exposition.

Friday, September 16, will be Ceramic Day. This is the most important day for members of the society to be present. In the afternoon a program along ceramic and chemical lines will be given by interested speakers, and in the evening motion pictures of the industry will be shown. Ross C. Purdy, newly appointed organizing secretary, will be present at the exposition the entire week.

On the morning of September 15 an important conference of the officers and committee members of the American Ceramic Society will be held, at the Hotel Commodore.



A Beautiful Vessel Made by Blending Colored Clays, No Duplicate Pieces Can Ever Be Made.

High School Has Ceramic Department

The ceramic department of the Wheeling (W. Va.) High School has placed an order with the Bucher-Smith Co., of Chester, W. Va., for a roller bearing jigger, which, by the way is the most recent improved piece of clay working machinery to be placed before the trade. The oddity in this connection is found in the fact that where only a few clay working establishments are to be found in the Wheeling district,

its Board of Education has established a school of ceramics. In East Liverpool, Ohio, which is the center of the general ware industry of the United States, no attention is given the ceramic industry in its high school. Such a department may be established to be included in the course of study with the fall term of 1922.

* * *

Announces Pottery Wage Reduction

An informal meeting of the Potters' Club, the membership of which consists of all of the smaller whiteware pottery manufacturers west of the Allegheny Mountains, was held a few days ago at the Ft. Pitt Hotel, Pittsburgh, Pa. W. E. Wells, of the Homer Laughlin China Co., and chairman of the Labor Committee of the United States Potters' Association, made an informal report of the work of the committee during its recent wage conference with the Executive Board and Conferees of the National Brotherhood of Operative Potters at Atlantic City, N. J.

During this conference, the agreement was signed whereby the whiteware pottery workers accept a reduction of wages of ten per cent. effective as of August 3 last, and an additional reduction of seven per cent., which will become effective as of November 1 next. After Mr. Wells completed his review of the work of the conference, there was a general discussion concerning the labor situation thruout the various pottery districts of the country.

* * *

Potters May Meet in Washington

While no time has as yet been set for the annual meeting of the United States Potters' Association, it is generally believed that the Executive Committee of the Association will select the Hotel Willard, Washington, D. C., as the convention hotel. The date will likely be selected for December, perhaps during the first two weeks in that month. Whenever this Association has met in Washington, which has not been for many years, its banquet has always been one of the most notable ever arranged by any private industry. Because of the activity of its reception committee, the speakers at these Washington festal events have included men possessing an international reputation.

* * *

Expect Pay for Imperfect Ware

For over a month past a strike has been under way at the plant of the Monument Pottery Co., Trenton, N. J., manufacturer of sanitary ware, and the company has now secured a permanent injunction restraining a number of former plant workers from promoting or participating in the strike of operatives with respect to "picketing or loitering, violence, attempts at intimidation" or the like. The strike was declared as a result of a disagreement with the company in connection with a rule compelling workmen to make good for ware judged as imperfect. The men, it is said, are willing to engage along such lines provided that the defects in the ware are due to carelessness or poor workmanship, and further that the board of judges be composed of a number of representatives of the company and of the union. No immediate settlement is in sight.

* * *

To Have Elaborate Display Room

The new office building of the Taylor, Smith & Taylor Pottery Co., at Chester, W. Va., will be ready for occupancy within the next few weeks. The former office building was destroyed by fire during the early summer. Red face brick

was used for the walls of the building, which is two stories high and basement. In the basement the decalcomania stock will be kept in steel cases, and the first floor will be used for general office and commercial purposes. The second floor will be given over entirely to the display of the products of the firm. William C. Lynch, sales manager for this company has announced that while not the largest sample room in the East Liverpool district, it will be, nevertheless, the most elaborately furnished with reference to the display of decorated dinnerware and for the convenience of buyers.

* * *

Testing North Carolina Clays

D. M. Moodie of the MacEwan-Moodie Engineering Co. of Charlotte, N. C., who was formerly connected with many of the brick plants in the vicinity of Sandusky, Ohio, is spending some time at the ceramic department of Ohio State University. He is testing clays and shales from Forsyth, Stanly and Union counties, N. C. The tests proved very satisfactory, as shown by his report to the people interested in the promotion of the industry in North Carolina.

* * *

Terra Cotta Employes Have Outing

Employes of the Atlantic Terra Cotta Co. at its three plants at Tottenville, S. I., Rocky Hill and Perth Amboy, N. J., with their families, enjoyed an excursion up the Hudson River on August 27. The steamboat "Nassau" was chartered for the occasion, taking the party to Forest View Grove, where athletic games and other sports were arranged by the committee in charge, headed by Erick Anderson of Plant No. 2, for the entertainment of the guests.

* * *

New Jersey Pottery Conditions Improving

Pottery conditions are improving at Trenton, N. J., and labor, now quite plentiful, is being employed in larger numbers. The different plants, including sanitary ware, general ware and electrical porcelain, are operating at considerably below normal, excepting in certain instances where orders taken some time ago have been sufficient to carry the plants along. More inquiries are being received and a number of sizable orders recently have been placed in the general ware line.

* * *

Install Fire Prevention Systems

A new sprinkling system has been installed in the plant of the Kenilworth Tile Co., at Newell, W. Va. This system which protects every department of the plant was completed at a cost of between \$12,000 and \$13,000, Manager Claude Nease announced. Taking advantage of a shut-down other repairs have been made in the various departments. The plant will likely resume operations about the second week in September. Operating normally the plant affords employment for between 75 and 100 workers.

* * *

Will Show New Pottery Shapes

Several new shapes in teapots will be shown soon by the Genessee Pottery Co., of Chittenango, N. Y., which concern is under the management of Allen W. Surles, for many years with the D. E. McNicol Pottery Co., of East Liverpool. The company is featuring only two kinds of ware, jet and red glaze products. Molds for the new shapes have been recently ordered in the East Liverpool district.

The SUPERINTENDENT

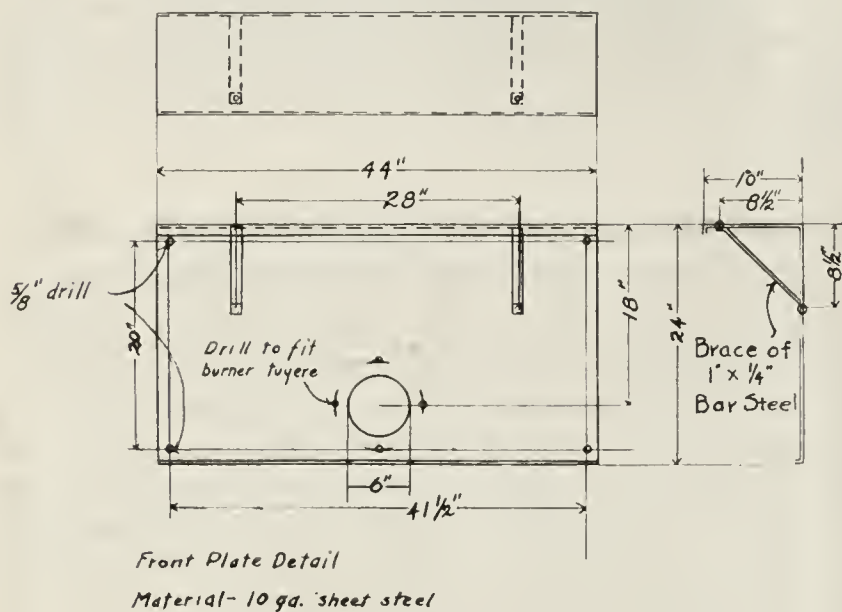
Helpful Hints for Practical Men
Whose Problem is Maximum
Production With Minimum Cost

Design of a Test Furnace for a Brick Plant

Nearly every clay plant can make use of a test furnace. Undoubtedly our readers will be interested in a description of the design of a small test furnace used by the Streator (Ill.) Brick Co.

D. P. Ogden, who built this furnace, states: "It was built especially with the idea of obtaining an absolutely controllable furnace atmosphere within the chamber. Thus, by taking a flue gas analysis and temperature readings, and recording the same against time, we could know exactly what thermal and chemical treatment were given to the ware being fired.

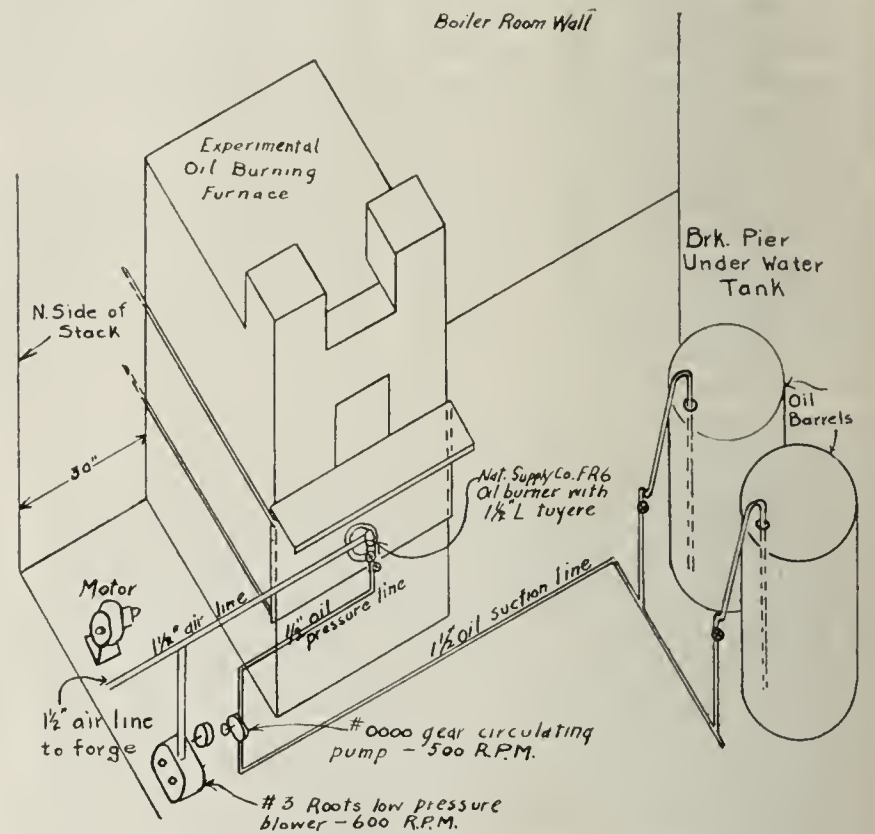
"You will notice that in the lower part of the furnace a combustion chamber is provided which flares out from the burner as it progresses. The design of this combustion chamber is such that as the air and oil enter the masonry flue they are caused to roll and eddy along its walls.



Details for Front Plate, Burner Position and Shelf for Home-Made Test Furnace.

"To obtain this highly desirable result the burner must be accurately located in the center of its opening and the combustion flue must be of the right proportion. Also, it will be noticed that a baffle wall or target is provided ap-

proximately 2 feet from the burner against which the combustible material can strike if it has not already been burned. This aids materially in reducing the time required for the refractories to become sufficiently hot to readily ignite the oil.



"The gases pass upward from the combustion chamber thru a small narrow flue into the heating chamber. The purpose of the small flue is to increase the velocity of the completely burned gases after they enter the chamber. This causes them to whirl or eddy and facilitates uniform heat distribution at lower temperatures. The gases are withdrawn from the heat chamber thru a small flue which extends entirely across the bottom of the chamber just inside of the furnace door, so that, if at any time there is a leakage of cold air thru the furnace door, it would be drawn immediately into this flue, and would not come in contact with the ware within the chamber. This feature is of advantage in the event that it is desired to main-

Thermal Limits of Time-Temperature Relations

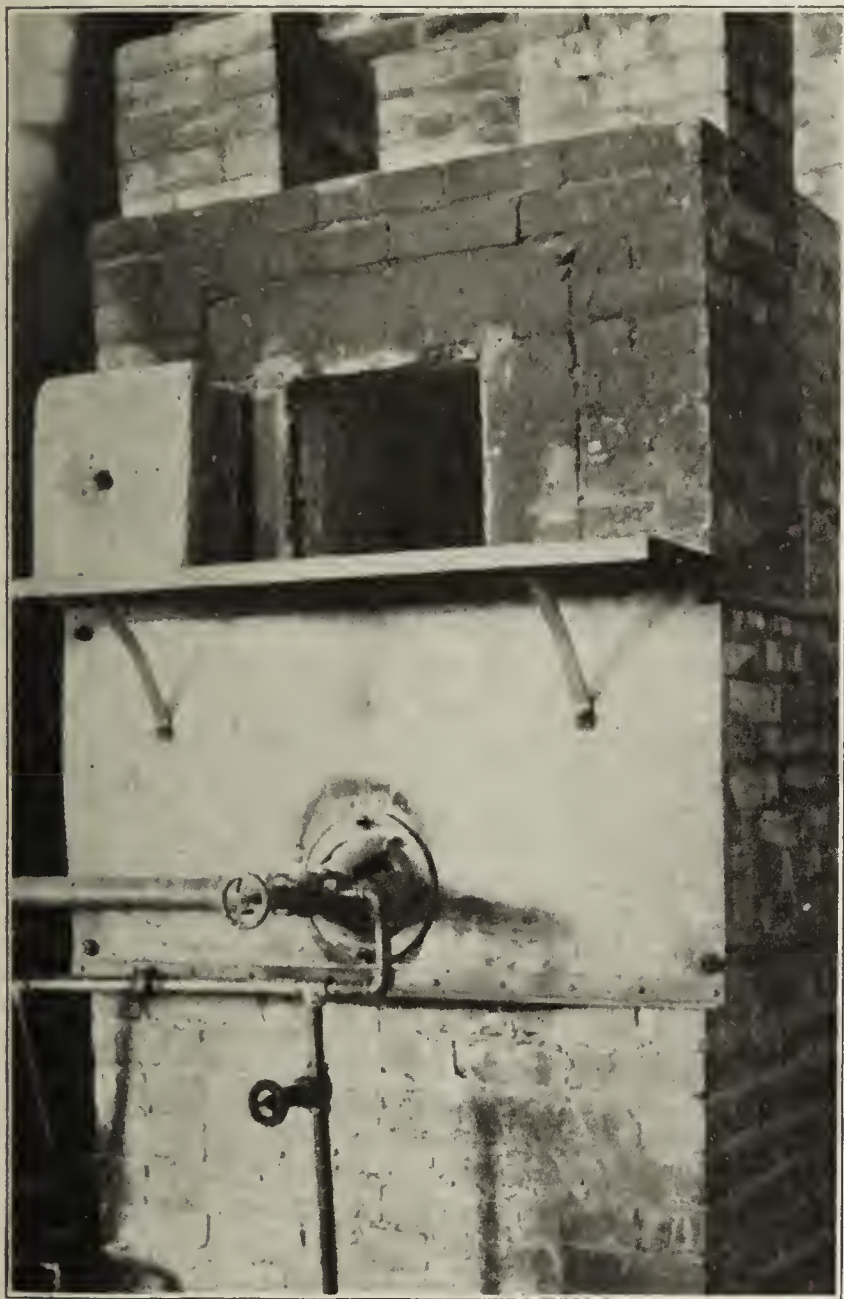
There are definite thermal limits where the time-temperature relations are confined. These correspond to the lowest temperature at which partial softening of the clay, which is a necessary condition of vitrification, can take place.

It should also be recognized that the closing of the pore system in a clay body is not entirely due to the action of fluxes. Part of it may be ascribed to the contraction of the colloidal portion of clays since condensation is typical of many amorphous bodies. We have however, no means of differentiating between the two kinds of contraction. In impure clays, and in materials like shale, this condensation is not marked. The colloidal material causing the contraction in the clay is active in this direction only as long as it exists in this form. As soon as it becomes transformed into the crystalline state or becomes "set" due to the action of fluxes, it ceases to show this phenomenon.

tain strongly reducing conditions within the chamber and at the same time lower the temperature; for under these conditions it is not practical to keep much of an increased pressure within the furnace chamber.

"After going downward thru this exit flue, the gases pass outward and up thru the two small stacks on either side at the front of the furnace.

"It will be noted that this furnace has been built with thick walls which are rather heavily loaded with insulation. This was necessary and desirable because the combustion takes place some time before the fire reaches the ware and also because it was desired to avoid rapid temperature fluctuations.



Photographic View of Front of Furnace Showing Burner and Door Into Kiln Chamber.

"So far the furnace has been used not more than one-half dozen times, but we have found it easily possible to reproduce any of the standard shades and grades of brick that are manufactured on the plant in from fifteen to twenty hours' firing time. The oxidation of a standard building brick is accomplished in from five to six hours at a temperature of 1,500 deg. F.

"This furnace is fired with gas oil of thirty-four to thirty-six Baume which was purchased in barrel lots at a price of nine cents per gallon when prices were the highest. About one gallon per hour is consumed in maintaining the temperature we desire."

✱ ✱ ✱

Has Started Full Operation

The Metropolitan Paving Brick Co., New Castle, Pa., employing 250 men, has started operating at full time after some months of idleness. When in full operation the plant turn out 200,000 brick daily, R. C. Wallis, manager, says.

BRISTOL'S RECORDING PYROMETER



tells the workman at a glance just what the temperature conditions are now, what they have been, and in what direction they are leading. With this knowledge he can readily obtain close regulation—and even inexperienced workmen can do better work.

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AE-291

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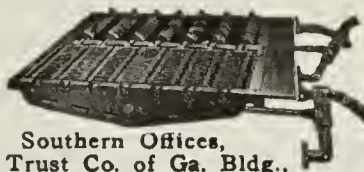
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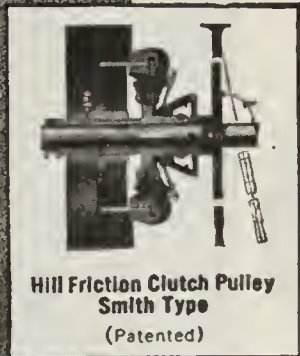
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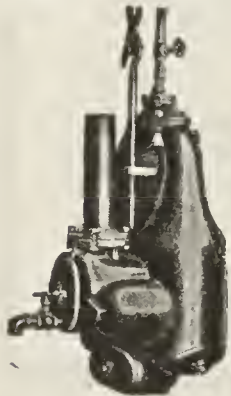
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QUESTIONS

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a Waste, Improve Your Ware
or Lower Your Production Cost

Address all communications intended for this department to "Editor Questions and Answers," care of "Brick and Clay Record," Chicago.

Has Trouble in Making Good Tile

987. Ohio—We are attempting to manufacture drain tile from shale and are having trouble in turning out good tile.

The tile break down in cutting or crack if the clay is run stiff enough to leave them round or become distorted when the cutting wires go thru and the scoops dig into them if the clay is run softer. In addition, the edges of the tile are badly pulled down when the wire goes thru.

We grind the shale in a rather light pan and screen thru a 16 mesh piano wire screen. We use a Fate combined pug mill and tile machine and a Fate cutter without friction attachment. The knives and auger in the tile machine have all been renewed with no better results.

We are almost positive that your trouble lies in the fact that your clay is not pugged sufficiently. In other words, it is not tough enough. In order to test this fact, we would suggest that you work some of your clay thru your machine two or three or even four times in order to develop the full plasticity. It is harder to make drain tile than brick out of shale, and especially if the pugging capacity is small.

One improvement might be made, and that would be, to mix a certain percentage of surface or other plastic clay with your shale. It may be hard to put this plastic clay thru your dry pan and your capacity might be reduced thereby.

The writer has also improved the plasticity in a case of this kind, by removing one of the auger knives in the barrel of the machine in order to increase the pugging capacity. This will reduce your output and increase your power consumption. Another suggestion would be to move the die an inch or so further from the augers if that is feasible. This will also increase your pugging capacity.

✻ ✻ ✻

Has Fire Clay Deposit Five Miles from Railroad

988. Missouri—I have recently acquired a clay deposit of a very high grade fire clay. A brick of this clay went to cone 34 neither swelling or shrinking. The clay is right on the surface but is about five miles from a railroad.

Would it be commercially practical to manufacture brick from this clay? Would it be possible to sell the raw clay at a profit? What would be the cheapest and most practical way of getting the clay to the railroad? I thought of building a tramway. Can you tell me the approximate cost of a five mile tramway suitable for clay work?

If it was decided practical to start manufacturing, how could I go about financing the project so as not to entirely lose control?

It seems that the most feasible method of getting your clay to the railroad at the present, would be to use auto trucks or wagons. We know of one installation of an aerial tramway in 1914 in Pennsylvania that cost \$13,000 for 1,800 feet. Naturally the tramway for your five miles would not cost as much in proportion, but with the increased cost of material

and ANSWERS

Best Authorities in Every Clay working Branch Are Called Into Consultation—Their Advice is Free to You, Thru These Columns

Should a reply be desired by letter, send a stamped and addressed envelope with your question, and it will be answered promptly.

and labor, we imagine that it would cost \$50,000. We also estimate that the narrow gauge track with locomotive cars, and so forth, would cost at least as much. We doubt very much whether you can interest anyone to furnish this much capital without some definite assurance of the feasibility of the project.

Considering present business conditions, it seems it would be hard to interest capital in the project at the present time, and our advice would be for you to start in on a small scale hauling by wagons, until your business enlarges enough to justify the purchase of auto trucks.

It is perfectly practical to manufacture brick from your clay, but low prices that are obtained by competing plants at the present time, would make your profit very small or nothing when you consider the increased cost that your clay would entail.

* * *

Eliminating White Scum from Face Brick

984. Wisconsin—We are manufacturing a red rough face brick but are experiencing considerable trouble due to our brick showing a white scum in the kilns.

These brick are dried in the open air in drying racks and water smoked first with wood and then with smokeless coal and are fired with a good grade of Southern Illinois coal.

We are water smoking from five to six days and are hot firing about six days, burning them in round down draft kilns. The bottom part of these kilns is set with sand mold brick and these brick do not show any white scum.

If you are able to suggest a remedy from the above information we would like very much to hear from you. These brick are made on a Fate machine and are cut off on a Fate board delivery cutting table. A good deal of oil is used in lubricating the cutting table and it occurs to us that this may have something to do with our trouble. The die is lubricated with water.

Your trouble is most probably caused by the presence of soluble salts in the clay or by the action of sulphuric acid gas in the kiln.

According to Ries, the following methods have been suggested for the prevention of dryer white and kiln white:

1. Use the clay in its unweathered condition, or before the soluble salts have time to form.
2. Use the clay in a thoroly weathered condition, thus permitting the removal of salts by leaching.
3. Change the soluble salts to a harmless form by precipitation with barium compounds.
4. Prevent the concentration of salts on surface of brick by rapid firing.
5. Removal of whitewash in the kiln by using a reducing flame.
6. Coat the brick with some combustible substance, such as wheat flour or coal-tar, which burns away with a strong reducing action and removes the whitewash.

CRESCENT BELT FASTENERS

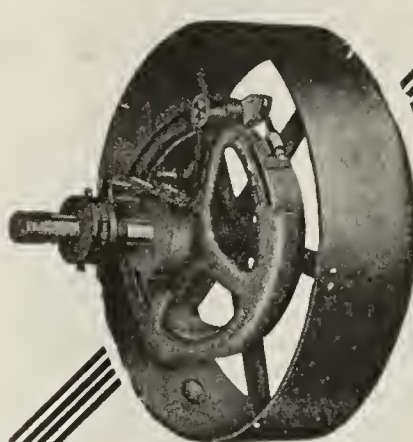
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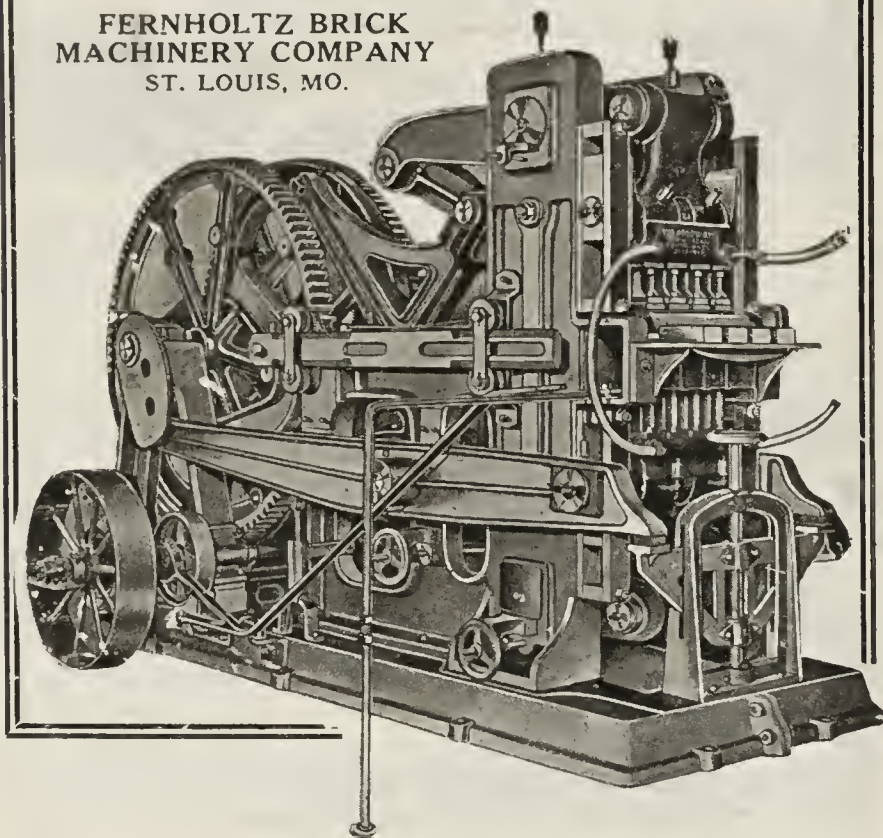
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You can safely guarantee that your brick will be

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You can get a higher price and influence architects to specify your product because Efflorescence is prevented absolutely.

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Pittsburgh, Pa.

The fact that your brick shows good red color when broken, shows that it must be soluble salts that are causing your trouble. There must be some sulphur in your clay, and we judge that your sand-molded brick do not show this discoloration, because they dry faster than the stiff-mud brick.

The fine texture of your brick will cause it to dry slowly and may cause this precipitation of sulphur. We imagine, however, that you cannot overcome this fine grinding on account of the lime content in your clay.

The use of oil will cause some discoloration, but we do not think that this is the case with your brick.

The use of carbonate of barytes has overcome this difficulty for a great many other manufacturers.

✻ ✻ ✻

Burning Flower Pots With Drain Tile

989. Iowa—I have a friend who has a flower pot machine and a bunch of plaster of paris molds for molding pots; in fact, has all the equipment it takes to make flower pots. He has offered to sell the outfit to us for \$50, he is out of business and says he wants to get them out of the way.

Now we have a clay that burns a good red and is porous, and I understand that is about what is needed for a good pot clay. What we would like to know is will it be a paying proposition for us to fix up a part of our drying shed so we can make pots in the winter and at odd times and burn them in connection with our drain tile, or is the business overworked now? This is a new idea to me and I have never looked into the matter, so anything that you can tell us will be greatly appreciated.

In addition to the specifications for flower pots that you mentioned this material must be smooth on the inside.

Greenhouse owners desire this quality so that when they wish to remove the contents of a pot, they can do so easily. We doubt whether plaster molds for flower pots will produce ware that is sufficiently smooth on the inside. The ordinary flower pot is made in an iron mold and a core rotates while pressing the pot.

We doubt very much whether you can burn flower pots in connection with your drain tile. The pots have a thinner wall and if you place them in the top of the kiln, you will either over burn them or under burn the drain tile which you have in the bottom. Flower pots are usually burned in low kilns, and the ware is not set more than six or eight feet high. It might be possible to set the pots in part of the bottom of the kilns, if you cover them with slabs of fire clay, so that no weight would rest on the pots, and then set drain tile on top. Altho this is possible, we would not recommend it, and doubt very much whether or not it would be a success.

The price per ton obtained for flower pots is much larger than for drain tile, but we do not know anything about the market in Iowa.

✻ ✻ ✻

Wants Data on Use of Pulverized Coal

985. North Carolina—We should like to have all the information you or your readers can give in regard to the use of pulverized coal in the burning of brick. We are especially interested in the use of the pulverized coal in round, down-draft kilns which are burnt on the periodic system and what economy if any can be gained by the use of this coal.

Thus far very little progress has been made in the clay products industry in the utilization of this kind of fuel. The use of pulverized fuel for boiler plants has been found successful. We believe that eventually some one will devise a system for burning brick with pulverized fuel, but we doubt

if the utilization of this method of burning can be applied to a round kiln.

Difficulty in burning pulverized fuel in down-draft kilns is the deposition of the ash upon the ware which would make it unsalable. However, in the tunnel kiln and in up-draft kilns we believe that there will be found a method of applying pulverized fuel burning.

The economy in using pulverized fuel comes in the ability to secure perfect combustion and this possibility results in a great saving where a successful installation is made.

* * *

Grinding Hard Shale

990. *New Brunswick—We would be obliged if you could inform us thru the columns of your paper what machinery would be necessary for the grinding of a hard fire clay shale to bring it to a suitable fineness for commercial use. We have large deposits of such a shale on our property which we wish to manufacture as above, but are ignorant of the processes and the machinery required.*

Any dry pan or hammer crusher would be suited for grinding fire clay or shale. Any of the machine manufacturers listed in our "Buyer's Guide" under dry pans or crushers and pulverizers would be glad to give you prices and capacity of their equipment.

* * *

Sewer Pipe Crack in Drying

986. *British Columbia—We are troubled with our sewer pipe cracking, in the bell and socket in drying; the crack is in most instances only in the one place, but sometimes in bad cases a number will crack in three or four places, opening widely as the drying proceeds. The four inch and six inch are not subject to this defect, but the sizes above that do so in an increased amount as the size increases.*

The clay is mined from a mountain near the factory and the face is into the hill at the present time about 100 feet, and we endeavor to weather it to some extent by tipping at two dumps and using from them alternately, which gives it from ten days to two weeks to weather. The clay is sprayed with water as it is dumped in dry weather. Then it is ground in dry pans and elevated and run over screens to a hopper which discharges into the wet pans; where it is pugged and fed to a Stevenson press, dried on slatted dry floors which are 84 feet by 274 feet. Slats are 3½ inches wide with ½ inch spaces.

I have made special effort to eliminate drafts by closing openings, at elevator doors and placing burlap screens round batches as they come from the press and have top of the socket for the first two or three inches, inside and outside covered with a thick black crude oil to retard drying at that part. These precautions have stopped the fault to some extent, but it is still bad and I would like to get at the bottom of it if possible.

The drying system is by exhaust steam conducted thru pipes under the floor joists and we put no heat on top of a fresh batch of pipe until the clay has its initial set. Steam is not kept up at night or when the factory is not working on Sundays and holidays.

The clay is somewhat of a plastic nature and makes a good sewer pipe, glazing at cone 5. Can you suggest anything else we can do to stop this mortality?

W. B. Harris, of the Coral Ridge Clay Products Co., South Park, Ky., who has had many years of sewer pipe manufacturing experience, has offered the following suggestions in the solution of the problems mentioned above.

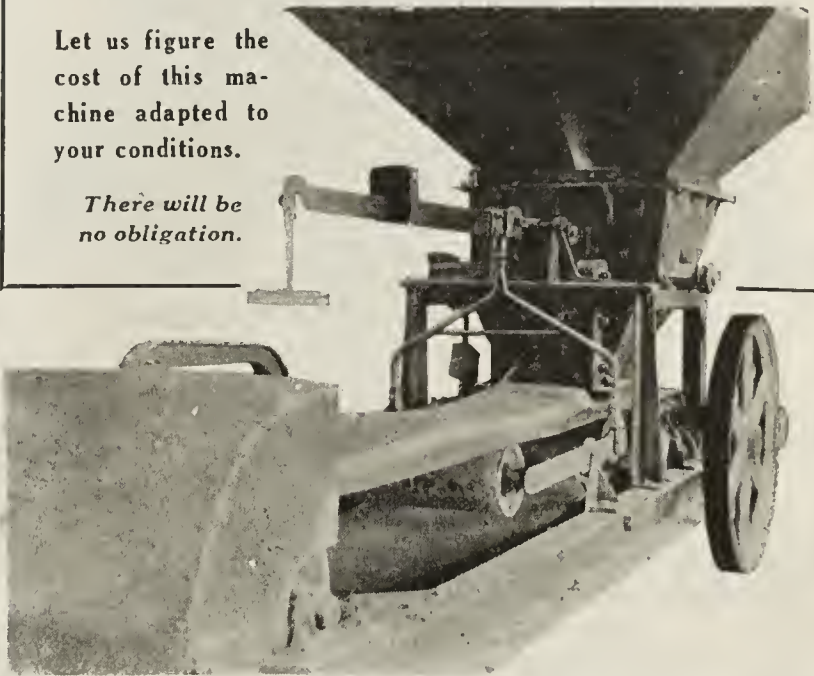
"Would suggest that they try different amounts of grog, say two, four, six, eight and even ten shovels of grog in each

The Schaffer Poidometer

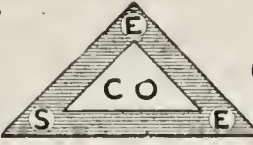
has proven its ability to produce results. There are hundreds of satisfied users. For enlarging your capacity and for getting a better mix and temper with your clay this machine is unsurpassed. It will mix and temper from 1½ to 21,000 lbs. of clay per minute. It is 99.75% accurate. Never needs repairs. Saves the entire labor of the pugmillman.

Let us figure the cost of this machine adapted to your conditions.

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The Invincible Barrow



This favorite barrow has lost none of its popularity. We furnish them for either brick or sewer pipe and with plain wood, babbitted or spring bearings. They are honestly constructed thruout. On account of increased manufacturing facilities we are able to make immediate delivery.

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In Need of Conveyor Elevating or Transmission Belting?

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Many perplexing belting problems have been solved by our experts. Probably we can assist you. May we have the opportunity?

QUAKER CITY RUBBER CO.

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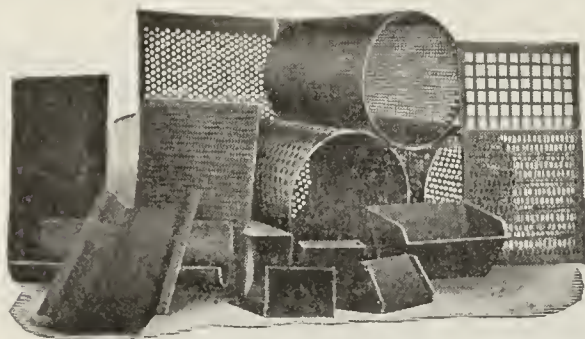
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GENERAL SHEET and
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mill of clay. If as he says his clay is 'somewhat of a plastic nature,' this may help him.

"Another thing they might try is this: As a rule the holes in the former on a sewer pipe die do not extend thru the lug that locks the former to the die, thus leaving a space on the former of two or three inches thru which no clay can be forced. By marking a few sockets where this dead space occurs, they can tell if the dead space causes the cracks and if it does, the former can be bored thru the lug. The clay may be pressed enough more at the point where there are no holes, to make points of unequal density in the socket."

Some other solutions for solving of these problems have been submitted by L. B. Rainey, superintendent of the Fallston (Pa.), Fire Clay Co. Mr. Rainey says:

"Not knowing anything about the type of clay used, it is hard to venture an opinion as to the cause of his troubles.

"He states that he can dry his 4 inch and 6 inch pipe without trouble, but as he gets into the heavier sizes, his troubles begin, increasing as the thickness of the walls of the ware increases. Of course, that is what you would expect if you had a delicate clay.

"His idea of painting the sockets with crude oil, to retard the drying is good. I have seen dampened burlap cloths, put over the large pipe, especially branches, etc., to retard the drying, with good results.

"I would guess that his trouble lies in the rate of drying his larger sizes, more than in any other thing, inasmuch as he successfully dries his small sizes.

"If his clay is too 'fat,' the addition of some less plastic material might help. Also, the addition of a small amount of some chemical, such as salt, soda ash, etc., at the dry pans frequently aids. This latter is based on the theory of deflocculation. The latter suggestion would have to be considered with respect to possible scumming, and also the salting process at the finish of the burn.

"I remember some experiments that we tried out, at one time, on a Western Canada clay, and we found nearly all of them, very difficult to dry. In fact, some of them could not be dried except by pre-heating. Of course, that is out of the question, where a large tonnage is to be handled. It seems to me that the best way for this man to get at this, would be to employ a competent man to go to the plant and familiarize himself with the local conditions. It is only a guess in the dark to attempt to offer a suggestion, from a distance, with no knowledge of the clay under consideration."

* * *

IN *the* WAKE of *the* NEWS

Being Brief Mention of a Host
of Interesting Happenings in the
Varied Fields of Clayworking

Death Takes Henry B. Loveland

Henry B. Loveland, president and general manager of the Ellicott Brick Co., of Jewettville, N. Y., has passed away. The he died the latter part of May, word of his death was not received until just recently. Mr. Loveland had been engaged in the clay manufacturing business practically all his life. His son, George W. Loveland has succeeded his father as president.

Aged Clay Worker Dies

Archibald Stewart, aged 78 years, for a long time superintendent of the Pennsylvania Clay Co., at Rochester, Pa., died

at his home in Beaver. He was a native of Beaver County, Pa., and the early part of his life was spent in the river business. Giving up this line of activity, he became associated with the brick manufacturing business, and remained at this trade thru the remainder of his life. He was prominently identified with Odd Fellowship in Western Pennsylvania, and an active member of the First Presbyterian church of Bridgewater, Pa., which adjoins the city of Beaver.

Pennsylvania Superintendent Dead

John W. Colbert, superintendent of the plant of the New Castle (Pa.) Mining & Clay Products Co., died suddenly at his home in that city, August 27. He was 56 years of age and had been identified practically all of his life with the clay products industry.

Death of Rock Island Brickmaker

Hans Paulsen, who started a brick yard in Rock Island, Ill., in 1876, on the same location that it now occupies, died at his home in that city August 12. He was also president of the Frayer Coal Co. of Rock Island, and his three sons will continue the two lines of business.

North Carolina Loses Clayworker

W. G. Poate, superintendent of the Acme Brick Co., N. C., died at James Walker Memorial Hospital, Washington, D. C., following a second operation. Mr. Poate was identified with the clay products industry for the greater part of his life.

Spent Summer Abroad

K. B. Grahn, president of the Louisville, Ky., Fire Brick Works, who has been abroad this summer, is planning to return to Louisville the latter part of September. He writes that he has had a very enjoyable trip.

Takes Position at Santa Clara

W. H. Cook, who has been superintendent of the Harker Pottery Co., No. 2, of East Liverpool, since 1915, has resigned and will go immediately to Santa Clara, Cal., to assume the superintendency of the Homer Knowles Pottery plant there.

Encouraged After Ohio Trip

John Cooper, manager of the Columbus, Ohio, branch of the Thomas Moulding Co., has returned from a business trip to Akron, Cleveland and cities in northern Ohio, where he looked over the building situation. Mr. Cooper is somewhat encouraged over the outlook.

Delivers Interesting Address

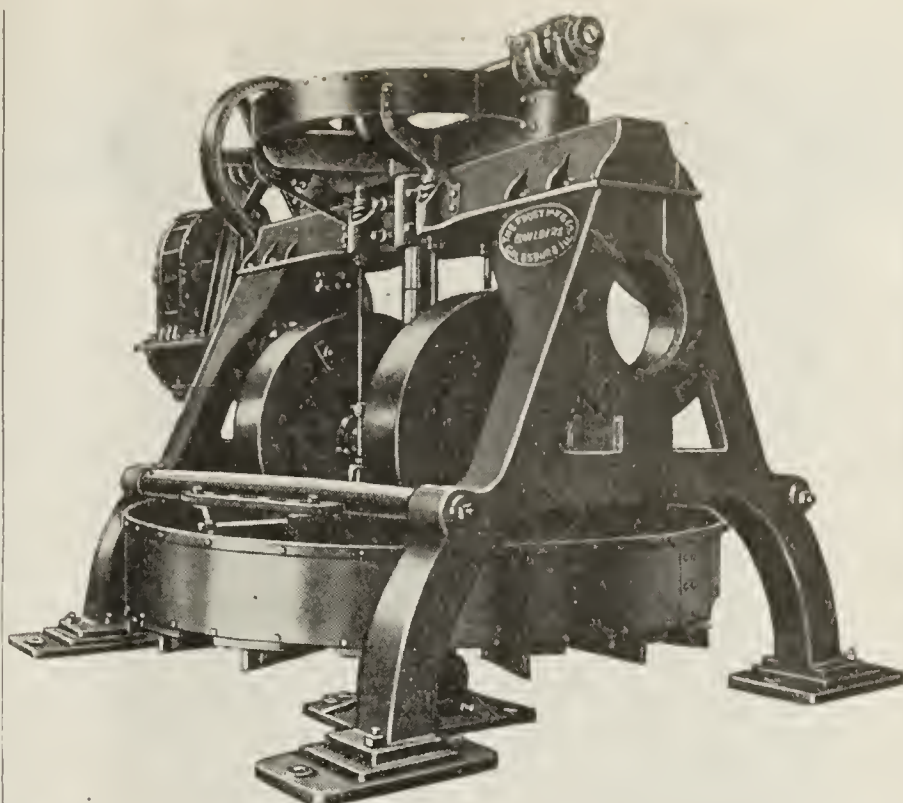
Colonel John B. Rose, well known in the common brick industry in New York, gave an interesting address under the title of "Making and Marketing Common Brick," at a meeting of the New York Building Congress, held at the Engineers' Club, Thursday afternoon, August 18.

Elected Delegates to Convention

C. T. Stewart, of the Harbison-Walker Refractories Co. and R. T. Blair, of the Pittsburgh Gage & Supply Co., have been chosen delegates to the national convention of the Purchasing Agents' Association of the United States to represent the Pittsburgh Purchasing Agents' Association. The convention will be held in Indianapolis, October 10 to 13.

Moves to Texas

George Puls who has been in charge of the order and shipping departments of the A. P. Green Fire Brick Co., of



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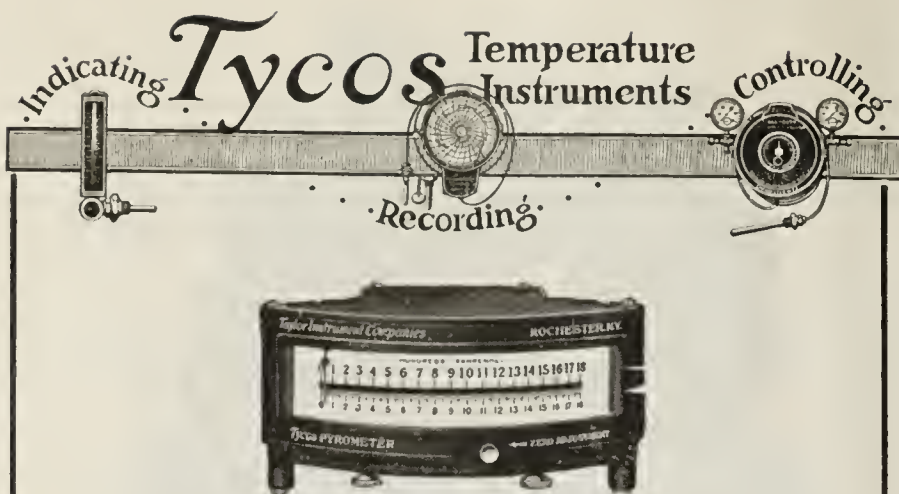
Based on years of experience in the business.

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Tycos is a modern, sure method of temperature control—a perfected system of indicating, recording and controlling temperature, that can be adapted to the existing requirements of any industry.

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Taylor Instrument Companies
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There is a Tycos or Taylor Temperature Instrument for Every Purpose

Adel Excavator

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The right machine and the correct method for excavating hard shale, chalk rock and other materials not of a soft sticky nature. The fine cut taken by the machine thru the different strata and around a large arc gives a thoroly mixed product which requires minimum crushing and processing.

This machine runs into the shale bank, cutting a swath 54 feet wide and from 40 to 60 feet high. Swinging thru a wide angle the excavator is steadily progressed, making a light cut thru the different strata, yet with such rapidity that the capacity ranges between 50 and 75 tons per hour, according to the nature of the material.



Mexico, Mo., for two years, has resigned to accept a position in charge of fire brick sales of the Acme Brick Co., at Fort Worth, Texas. Previous to his connection at Mexico he was in the sales department of the Evans & Howard Fire Brick Co., of St. Louis.

He will be succeeded by Virgil Morehead who has occupied an identical position at the Birmingham plant of the Harbison-Walker Refractories Co. Mr. Morehead has been traveling for the A. P. Green Fire Brick Co., thru Texas and the Birmingham district.

Joins Ceramic College Faculty

D. A. Moulton has resigned his position as ceramic engineer at the A. P. Green Fire Brick Co., of Mexico, Mo., to accept the position of assistant professor of ceramics in the Ceramic Department of the Iowa State College at Ames, Iowa. He will be in charge of the heavy clay products division and will also do some research work for the State Experimental Station. Mr. Moulton's extensive experience will enable him to show good results in his new position. He has been in the Engineering Department of the McLain Fire Brick Co., of Pittsburgh, Pa.; superintendent of the Dixie plant of the Peebles Paving Brick Co., of Portsmouth, Ohio, and engineer in charge of construction of the Credit Forks Tile & Brick Co., of Toronto, Canada. He is a member of the American Ceramic Society and of the English Ceramic Society, and a graduate of the Ceramic Department of Ohio State University.

New Arkansas Plant Contemplated

O. F. Smith and Son of Blanchard, La., are inspecting the clay deposits near DuQueen, Ark., with the idea of establishing a brick plant there.

California Plant to Open

By the middle of September it is expected that the plant of the California Pottery Co. will be opened at Merced, Cal., is the announcement made by President Frank A. Costello. The first unit of kilns has been erected and the necessary machinery is being placed. When the plant opens about 30 employees will be on the payroll. Announcement is made that sufficient orders have been booked to keep the plant running for six months if no more are taken. Many business men of Merced are interested financially in the plant.

Paving Continues Despite Labor Troubles

In spite of labor difficulties among bricklayers in San Francisco enough open-shop men were found to finish paving a considerable distance on Taylor Street near Geary with vitrified paving brick. Plans and specifications have also been made to continue paving near the beautiful highway facing the sea in the vicinity of Cliff House. This will be done in vitrified paving brick.

Peoria Plant Starts

The Peoria Brick & Tile Co. resumed operations August 8 and is giving employment to 120 workers, each of the plants of the firm requiring sixty men.

Jesse Hall, superintendent of the plant, said that renewed industrial activity is responsible for the reopening of the factory.

Newspaper Publicity for Paving Brick

How paving brick is made and its advantage to the community in helping to make better country roads and better city streets, will be told in a series of daily newspaper advertisements, which will be placed before the people of Spring-

field, Ill., every Sunday for several weeks. The plan is being adopted by the Springfield Paving Brick Co., and is being developed under personal direction of president W. P. Whitney and secretary-treasurer George H. Reiter. There will be a series of about twelve display advertisements, in which processes such as testing and the rattler, quarrying and the shale bank, drying and setting, burning, drawing, and the like will be emphasized, as well as general material on brick streets and their advantages, building grades and their uses and similar information. The advertising will be supplemented with news material which the newspapers will run separate from the advertising.

Devotes Much Space to Face Brick Display

As previously announced, the Wisconsin Lime & Cement Co., in its new offices, has quite a display of face brick. Reproduced here is one section of the two show rooms, showing the method of arranging the panels. Jos. Sullivan is



View of the Face Brick Salesrooms of the Wisconsin Lime & Cement Co., Chicago, Ill. The Company is the Largest Handler of Face Brick in That City.

manager of the brick department and has every reason to be proud of his sales rooms. In order to reach the main offices or the sales rooms of other building materials, it is necessary to pass thru the brick display rooms, and thus face brick gets considerable advertising.

Ends Long Shutdown

The brick factory owned by E. T. Harrison at Jacksonville, Ill., began manufacturing brick the middle of August after being closed since December, 1919. They are now manufacturing 25,000 brick daily there.

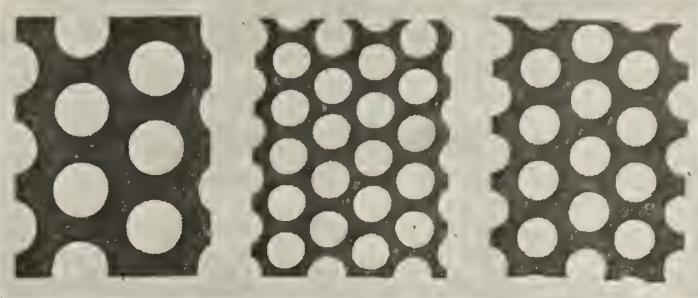
Electrical equipment has recently been installed.

Mr. Harrison's Waverly, Ill., plant will be in operation by September 1.

Investigating Clays in Idaho

Ernest Goodner, of the United States Geological Survey, spoke recently before a meeting of the Moscow (Idaho) Chamber of Commerce in regard to the clay deposits of Latah County. Mr. Goodner said that the U. S. Bureau of Mines had examined carefully into the resources of Latah County in respect not only to fire clays proper, but also to the clays that, properly washed, would be equal to any in the country for white ware. This work was done for the Seattle office, and altho there have been many examinations of clays from various states only four of the states produce the right kind of clays for white chinaware, which is the equal of the Eng-

Perforated Steel Screens



For Screening Clay, Shale, Sand, Gravel, Stone and Cement

All sizes and shapes of holes in metal of proper thicknesses to give the best screening results.

Sheets furnished flat or rolled to shape for revolving screens.

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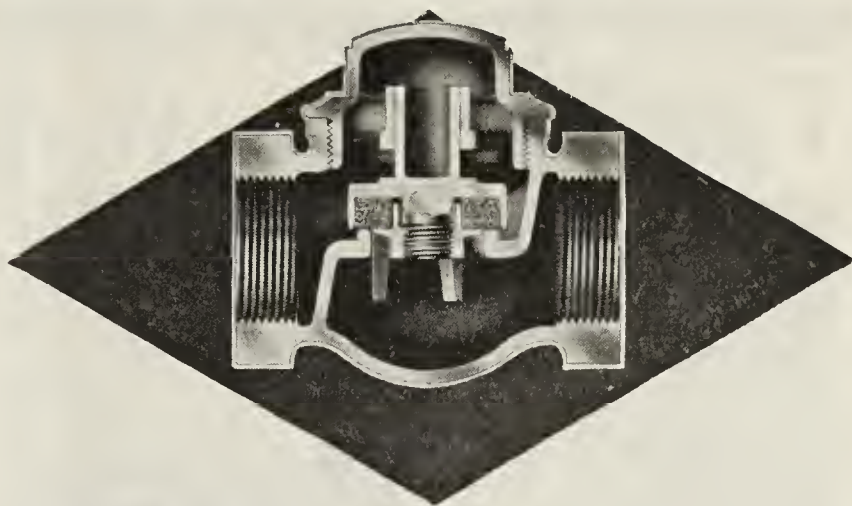


Figure 117

Jenkins Brass Horizontal Check Valve Screwed, standard pattern, for 150 pounds working pressure. Also made flanged. Fitted with Jenkins Disc which gives valve practically unlimited life. Know genuine Jenkins Valves by the Jenkins Diamond Mark.

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FACTORIES: Bridgeport, Conn.;
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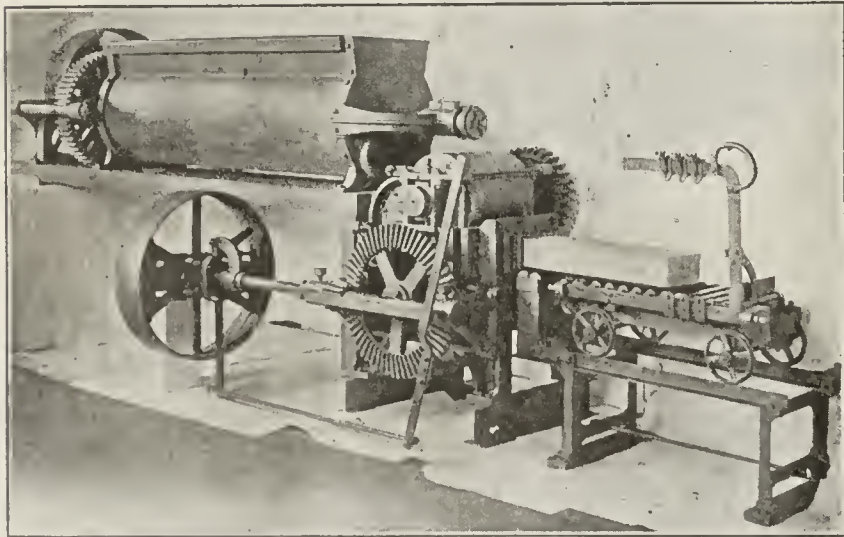
Jenkins Valves
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Dryer, Transfer and Clay Cars,
with Flexible Bearings.
Switches, Turntables and Track.
THE CHASE FOUNDRY & MFG. CO.
COLUMBUS, OHIO

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The Modern Way



A Unit for Stiff Mud Ware

From Laminating Clay Surface Clay
Short Bonding Clay Fireclay or Flint

This is not a DREAM, HOT AIR or a TOY, but the MOST simple, economical and practical unit of machinery on the market.

Number 1 Unit as shown has capacity of 10 to 20 Thousand. Larger units are furnished with simple automatic cutter, guaranteed.

CLAYCRAFT SERVICE is at your command.

Write Us

Claycraft Service Co.

503 Wainwright Bldg.
St. Louis, Mo.

lish ware. Mr. Goodner said that he knew of few places which produced a fire clay equal to that found in Latah County, and that the demand for electric insulators alone would doubtless make the business profitable. He assured the business men of Moscow that he considered the deposits well worth developing.

Business Is Good in Evansville

Brick manufacturing companies at Evansville, Ind., are feeling the full effects of the big building boom according to John Andres, secretary of the Standard Brick Manufacturing Co., of that city, who says that orders for brick are such that the brick industry will be stabilized for at least a year to come. Prices on various grades of work are approximately 30 per cent. lower than they were last year.

Plant Damaged by Fire

A fire at the Bergmann brick yard at 1100 N. First Street, Terre Haute, Ind., on August 18, caused damage to the roof and inside of the building which will probably reach \$500. The entire roof was destroyed and the remainder of the buildings near badly damaged from the blaze. The fire started in the furnace room and burned up the chimney igniting the roof of the building.

Indiana Brick and Sewer Pipe Reduced

Retail brick dealers in Indiana recently announced further reductions in brick and sewer pipe. The price of common building brick is now \$21.50 a thousand. Four-inch sewer pipe, 16½ cents a foot; six-inch sewer pipe, 24¾ cents; eight-inch sewer pipe, 38½ cents; flue lining, 8x8, 66 cents; flue lining, 8x12, 99 cents, 12x12, \$1.27.

Silos Should Be Built Now

Farmers desiring to build silos should not wait any longer but begin construction at once, say the animal husbandry men at Iowa State College. Due to the advanced season corn will be ready to cut for silage in a very short time. H. H. Kildee, head of the animal husbandry department, says that silage is unexcelled as a winter feed for beef and dairy cows. It is a very palatable and economical food and will make more beef per acre than any other feed, it has been shown by experiments. This is an excellent argument for the hollow tile man to convince the farmer that he should build a silo.

Kentuckians to Meet in January

J. Crow Taylor, secretary of the Kentucky Clay Products Association, reports that the organization hasn't anything in view just now, and that no sectional or other meetings are scheduled, the annual meeting shortly after the first of the year being the next thing on the calendar.

Country Business Good

The Coral Ridge Clay Products Co., of Louisville, Ky., reports very fair business, especially out in the state, local business this season not having been especially heavy. There has been a steady demand for hollow tile as well as brick from various sections of the state and there is a considerable amount of work out in the state in prospect, and some good local prospects, which are pending.

Coal Prices Not Increasing

It is interesting to note that in spite of the declarations of coal jobbers and producers that coal would be scarce and sky high later in the season, there has been no tendency toward a higher market in Louisville, Ky. Prices are remaining very firm, due to comparatively small industrial de-

mand, which is being largely supplied with screenings, from production of lump sizes. This is resulting in demand for mine run coal being slow, and holding the price firmly. With increased movement of prepared sizes screenings will be in still larger supply, which will hold the general steam market down. Coal operators are now claiming that a 20 per cent. increase in coal demand will force a car shortage, but the brick people cannot see the argument, and do not believe there is any car shortage or coal shortage in prospect.

Sewer Pipe Demand Good

The P. Bannon Pipe Co., of Louisville, Ky., reports that the company is now running full time in its hollow tile department, in connection with general work, and its Government contract at Dawson Springs, while the sewer pipe department is running almost full, as there is a very fair demand in connection with road work, and a good demand in connection with smaller sizes for plumbers' use. The plumbing business has been active all season, there having been a large number of small contracts.

Feared Mistake in Large Order

Leo M. Parsons, manager of the building supply department of the R. C. Tway Coal Co., handling the Hytex line, at Louisville, Ky., stated that he recently received an order for 50,000 fancy face brick for a church "up-state" and was so surprised to receive an order of that size that he took the matter up with the architect, who happened to be a Louisville man, as he felt certain there had been some mistake. Mr. Parsons said: "You may think I'm trying to be funny, but I'm not. The truth of the matter is that we have done a very fair brick business, but it has been made up of an innumerable lot of small orders for a few thousand only."

Expects Increase in Plain Face Brick

Andrew Hillenbrand, of the Progress Pressed Brick Co., Louisville, Ky., in a discussion of fads in brick, remarked: "We are planning to install equipment so that we can make rug or mat brick as well as plain face. However, I don't believe that the rough textured brick will be half as strong five or six years hence as it is now. Such brick catches all the dust and dirt that comes near and holds it. In the city where there is a good deal of dust, coal smoke, etc., buildings faced in rough textured brick are bound to become dirty in the course of time. Even smooth-faced brick collect dirt. You've got to give the public what it wants, and we figure to do it, but whereas a large percentage of the demand for face brick is for rough textures at this time, I don't believe the percentage will be as high a few years from now."

First Kiln Arouses Much Interest

The North New Portland (Me.) Brick Making Association has just completed the burning of a large kiln of brick and the operation has been watched with much interest by citizens.

Maine Company Receives Charter

The Central Maine Brick & Stone Corporation has been organized at Fairfield, Me., and has received a state charter. Desire Baker is president, William Seltzer, treasurer, and Harold E. Weeks, clerk, all of Fairfield. The concern will manufacture and deal in brick and cement products.

Gets Orders for 250,000 Paving Brick

The city of Pittsfield, Mass., has placed an order for 250,000 paving brick with the Mack Manufacturing Co. of New Cumberland, W. Va. The brick is to be used in a paving job in the vicinity of Park square.



A Cracked Setting is a silent request for insulation

SIL-O-CEL possesses but one-tenth of the heat conductivity of fire-brick. That is why SIL-O-CEL insulation furnishes your heated equipment with the much-needed protection that no refractory can give—prevention of cracks and strains in walls and settings.

The application of SIL-O-CEL between the refractory and the outer walls is the most effective means of confining the heat generated to the interior of the equipment and keeping it evenly distributed and constantly productive.

SIL-O-CEL insulation means reduction of radiation loss to a minimum; it means that walls and settings will no longer be subjected to overheating, consequent cracks and strains due to violent temperature changes.

SIL-O-CEL is the key to highest combustion efficiency, cut fuel bills, greater production and longer life to your equipment.

Write for Bulletin Y-50A
containing complete details.

CELITE PRODUCTS COMPANY

NEW YORK - 11 BROADWAY DETROIT - BOOK BUILDING DENVER - SYMES BUILDING
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CLEVELAND - GUARDIAN BLDG ST. LOUIS - RAILWAY EXCHANGE BLDG SAN FRANCISCO - MONADNOCK BLDG
NEW ORLEANS - WHITNEY CENTRAL BANK BUILDING

SIL-O-CEL

PREVENTS HEAT PENETRATION

TRADE MARK REGISTERED U.S. PATENT OFFICE



Better Production With More Speed

This clay feeder-mixer speeds up production and helps you to get full capacity out of your pug mill and dry pan auger. It takes heavy loads, feeds itself and delivers to the pug mill without any attention. It tempers the material perfectly, thus improving the finished product.

THE RUST SPECIAL Feeder-Mixer is made extra strong for hard work and large capacity. All gears run in oil and are protected by housings that keep out the dust and dirt. The MARION will invariably pay for itself in less than a year. It saves the labor of 3 or more men.

A special bulletin which covers our line of clay feeders and mixers will be sent to you without obligation. These machines have been such a help in improving ware, speeding production and saving labor, that we urge you to ask for this bulletin today.

Remember there is no obligation.

Marion Machine Foundry & Supply Co.
MARION, INDIANA

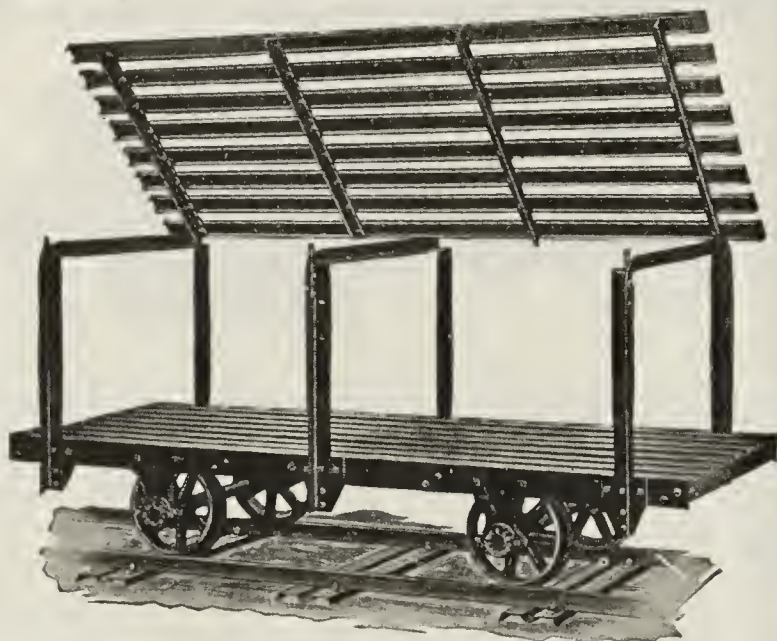


**HY-GRADE MANGANESE CO.
WOODSTOCK, VA.**

**Miners
and
Grinders**

**Especially Prepared
for Brick Making**

Sales Office: CHARLESTON, W. VA.



Lakewood Double Deck Car No. 167

**The Dryer Car That Dis-
criminating Users Demand**

BUILT FOR SERVICE



FRANK H. ROBINSON

Dryer Cars and Clay Working Equipment

Factory and General Office,

Pittsburgh, Pa.

Established Business Incorporated

The brick manufacturing business at State Farm Station, Bridge Water, Mass., long conducted by E. L. Cook has been incorporated under the Massachusetts laws as the E. L. Cook Brick Co. with an authorized capital of \$100,000. Ernest L. Cook is president; Georgianna M. Cook, treasurer, and W. S. Atwood, director.

Massachusetts Plant Busy

The Otter River (Mass.) Brick Co., is furnishing brick for a large weave shed at Worcester, Mass., for the Whittall Associates, also for an eighty foot radial brick stack.

Competing Materials Cannot Equal This

A recent issue of "Dependable Highways" contains the following interesting story:

Meridian, Mississippi, laid a pavement of vitrified brick in 1898 on Twenty-second Avenue, and now after the brick have given over twenty-two years of service they have torn up the old pavement, turned the brick upside down and relaid them. The city officials claim that they have as good a pavement as was the original one in 1898. The advocates of pavements made of concrete, wood or any other material cannot point to any such record for these materials.

We wish to emphasize another point. The original pavements of brick were laid without a concrete base and as a result the performance of the brick was not as good as it should have been. This pavement in 1898 was laid on a concrete base and that assisted these brick in making a good showing. In later years very few pavements have been laid without a base of concrete, and as a result the future reports of old pavements will most likely equal this record.

Refractories Plant Working at Capacity

C. F. Smith, superintendent of the Fulton (Mo.) Fire Brick Co., reports that the plant is now working with a full force and the business outlook at the plant is better than it has been at any time during the past six months. The company has been enabled to operate at full capacity because of a reduction of 12 per cent. in the wages of laborers at the plant. The men accepted the wage reduction without complaint and are putting in full time. Up to the time of the reduction men had been working four days a week, and for a considerable period the plant had been shut down entirely. They have welcomed the resumption of work on full-time basis. The commercial business of the plant has picked up nicely and soon promises to be of considerable size again. The orders from the American Arch Co. for railroad material also has taken a spurt during the past several weeks. The American Arch Co. has a large interest in the Fulton Fire Brick Co. and uses the bulk of its products in filling contracts with railroads for fire-box linings.

Expert Advocates Eight Inch Brick Wall

It is altogether probable that in the new building code, which is being prepared by a special committee of the Chamber of Commerce, of Kansas City, Mo., the minimum requirement for the thickness of a brick wall in the fire limits will be eight inches, instead of twelve inches, as it is at present.

Ira H. Woolson, consulting engineer of the National Board of Fire Underwriters, has been advising the committee, in the formation of the Kansas City code, and it will be drafted largely in conformity to the model building code of the National Board. It is one of the recommendations of the model code that the minimum be twelve inches, and Mr. Woolson stated that he had always advocated that thickness as the minimum. He said, however, that he had changed his views somewhat on the sub-

ject, and that he was about ready to advocate that the thickness recommended in the model code be changed.

Among the reasons he gave for his position were the following: First, the eight-inch wall was thick enough to sustain the weight it was called upon to sustain in all two-story buildings. He said that he had never seen nor heard of a building with eight-inch brick walls that had not stood up to the test, and there was no reason to suppose that they would not in the future.

In the second place, there was no evidence to show that the interior eight-inch brick wall would not do all, in the way of fire-retarding, that a twelve-inch wall would do. When the condition of the fire had become such that it would effect the wall, it had already burned through all doors or other openings that were in the wall, and destroyed all floors, so there was no particular reason for maintaining the wall any longer.

In the third place, it had yet to be shown that the eight-inch outside wall would not accomplish as much in fire retarding as the twelve-inch wall. It is one of the peculiar conditions of the work of protection from fire, that no scientific tests have ever been made in the matter. All kinds of tests have been made as to the value of materials in the erection of buildings, but very few as to their value in preserving them after built.

As an additional argument in favor of the eight-inch wall, he stated that if the less expensive wall was allowed in the buildings of the future, many owners would use the brick instead of the wooden walls, and that on the whole the fire protection afforded by the larger number of eight-inch walls would be much greater than that given by the fewer twelve-inch walls.

The matter of cost of building was stressed in the discussion, it being pointed out that the wall proposed as a minimum was one-third less in thickness than that required at present, and that at the present price of material, and labor, the saving would be quite worth while.

On the whole he advised the committee to use the thinner walls as the minimum required in the new code. No formal action was taken in the matter, as the meeting was wholly informal, but the opinions expressed at and after the meeting as well as in the discussions before hand all indicated that the recommendation of the expert will be followed, and the eight-inch wall made the minimum.

Cut Wages Five Cents

The National Brick Co., Strasburg, Ohio, recently put into effect a wage cut of five cents an hour. The company had been paying thirty-five cents an hour, which is higher than any other brick plant in this vicinity.

Brick Plants Busy—Resume Work

The clay products industry in the New Philadelphia, Ohio, district the past week is improved according to reports of manufacturers. A brick plant near Strasburg started recently to operate four days a week after being idle for several weeks. Another plant also reopened. One plant is closed down for repairs.

Trade Quiet But Operating at Capacity

J. M. Adams, secretary and general manager of the Ironclay Brick Co., of Columbus, Ohio, reports a rather quiet brick trade, altho there are signs of some improvement. Prices are still on the downward grade and this is expected to stimulate business to a certain extent. The Ironclay brick plant at Shawnee, Ohio, manufacturing face brick is still being operated with a full force of workmen.

Works at Capacity

The Columbia Fire Brick Co., of Strasburg, Ohio, has opened on full time. This is the first plant of this kind to

Why Shovel the Big Pile?



When you can develop
the same amount of heat
at a saving of 34%
by the use of **O'Gara
Harrisburg Coal.**

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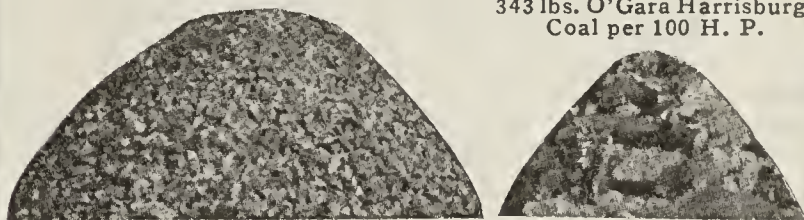
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"PEABODY FOR SERVICE"

resume operations in full with the expectation of keeping up the schedule.

Plant No. 1, of the Dover Fire Brick Co. is operating on full time, but its operation will depend on orders' received within the next few weeks.

Sandusky Brick and Tile Opens

Operations were resumed at the plant of the Sandusky (Ohio) Brick & Tile Co. Forty men, who had been idle since early in November, went back to work. Officials of the company say operation was considered warranted by a demand for the product of the plant that has been growing steadily since July and that they believe work will go on indefinitely. The capacity of the plant is 40,000 pressed brick per day.

Rate Reduction Would Increase Business

"A reduction in freight rates would help more than anything else at this time to improve the general brick industry," is the statement made by R. B. Keplinger, assistant general manager of the Metropolitan Paving Brick Co., of Canton, Ohio, one of the large manufacturers of paving brick in the United States.

"There is a decided improvement in the paving brick industry the past month and indications are very bright for a good fall season," Mr. Keplinger said. "All four plants of the Metropolitan company will be in operation commencing Tuesday, September 6, which will mean a bigger operation capacity than at any other time this summer. All four plants are located in the Canton district.

Mr. Keplinger said that the two plants of the company at Bessemer, Pa., No. 1 and No. 2, manufacturing paving brick, also will be operating at top speed after the first of September. No. 1 plant, which is new, is practically completed and is ready to manufacture its product. The No. 2 plant, which is a two-machine factory, will be turning out its quota of paving brick next month.

While cheerful as to future prospects in the brick industry manufacturers here say they would be greatly pleased if a reduction in freight rates would be forthcoming, but none expects this before April 1, of next year. "I believe there is a slight possibility of there being a cut in freight rates about the first of the year, but, of course, this is only my opinion," said Mr. Keplinger.

With wages of labor reduced to a minimum in the Canton and New Philadelphia fields operations at the various brick and tile plants have been more steady the past month than at any other time in the past year. It is believed there will be very little interruption in operations in the Canton district after September 1.

A big improvement in building at Canton is forecasted for next spring, as approximately \$2,000,000 in new bank and office buildings have been proposed, all of which are scheduled to begin erection early in the spring of 1922.

Ohio Building Association Meets

John J. Stoddard, of Columbus, Ohio, president of the Ohio Building Association League, which held its annual session at Cedar Point, Ohio, the latter part of August in making his annual address called attention to the fact that the home shortage is not a national menace but a local one. He said "Housing ills will not require governmental aid for alleviation, if the public will only place its savings in community building and loan associations."

More than 500 building and loan associations in Ohio were represented at the meeting. Much interest was centered there because of the housing situation in many parts of the state.

President Stoddard advocated the establishment of savings systems in the public schools in order to educate the children

in thrift. He urged the building and loan men to return to their various communities and preach the doctrine of thrift.

James A. Devine, of Columbus, is secretary of the league.

Fire Does \$50,000 Damage

Damage to the extent of \$50,000, it is estimated, was done by fire which broke out in the plant of the Cary Brick Co., at Newton Hook, N. Y. A bucket brigade made strenuous efforts to halt the progress of the fire but the flames quickly spread over almost the entire plant. Starting in the furnace room, the fire traveled to the drying sheds, thence to the office building, and later the machine room also burnt down. It is said a considerable part of the machinery has been rendered useless by the fierce heat. The fire practically crippled the plant and it will most probably be necessary to retain some of the company's employees to help in the rebuilding of the plant.

Opening of Highway Bids Delayed

Owing to the freight rate investigation before the Ohio Utilities Commission and the great likelihood of reduced cost in road building, Ohio Highway Commissioner Leon C. Herrick has called off the opening of bids which was to have taken place August 26. Mr. Herrick announces that bids for a large amount of road improvement will be asked as soon as freight rates and materials costs are readjusted.

Making Changes at Several Plants

The Continental Clay Co., which has headquarters in Canton, Ohio, with a branch office in Columbus is making a number of changes at its various plants. Plants No. 3 at Salineville and No. 4 at Warmington are in operation, the former making 8x8x16 hollow tile and the latter making face brick. The two plants at East Greenville, known as No. 1 and No. 2 which have been making hollow tile will be placed at work making face brick and hollow building brick. The change is scheduled to be made about September 1. The Continental Clay Co., has recently opened a sales office in Longacre Bldg., at 42nd St., and Broadway New York. A storage yard will also be opened in that city when the company will be fully represented in the east.

The company has recently completed a number of improvements at its plant in Columbus, located on Galloway Avenue which is known as No. 5. An aerial storage system for loading and unloading sand and gravel has been completed. This has a capacity of 1,000 tons daily.

Many Homes Needed in Cleveland

Relief from housing shortage in Cleveland, Ohio, and thru-out the county, can be obtained only thru investment of small savings in savings and loan association projects. This is the statement this week of James A. Devine, secretary, the Ohio Building Association League, following the announcement of the actual shortage of houses in Cuyahoga County by the United States Department of Commerce. Savings institutions catering to home financing are declared by Secretary Devine to be the one medium which will supply the money to carry on the projects.

According to the governmental department figures, there are 27,846 houses needed in Cleveland and the county to properly house the population. At the present time, the department advises, there is one family out of six without its home. By supplying these families with housing, high rents will be defeated, the department asserts.

Refractories Company Organized

The Anthracite Refractories Co., Blakely, Pa., has been organized with a capital of \$150,000 to manufacture fire brick

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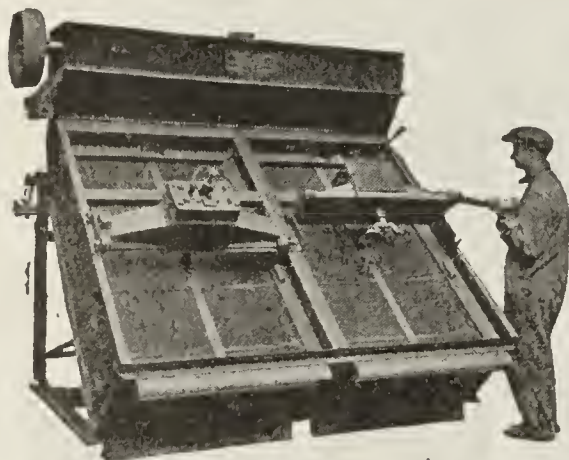
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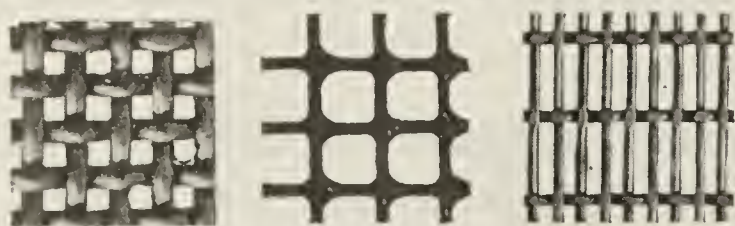
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and other refractory products. D. J. Beardslee, Peckville, Pa., is treasurer of the company.

New Brick Company at Reading

The Penn Shoppe Brick Co., Reading, Pa., has been formed under state laws with a capital of \$50,000 to manufacture brick and other burned clay products. A. F. Kostenbader, Reading, is treasurer.

Organizes to Make Brick

The incorporation of the Chattanooga Brick Co., with a capitalization of \$50,000 has been announced. Incorporators are L. C. Hayle, Sr.; Robert E. Winsett; Thomas C. Elder; L. C. Hayle, Jr., and William Whitice.

Plan Building Modern Plant

Efforts are being made by the Panhandle Brick & Tile Co., of Amarillo, Tex., recently incorporated, to have a modern and efficient brick plant in operation by October 1, it is stated. The company has practically inexhaustible deposits of high quality shale, from which it is planned to manufacture all types of brick and later on hollow tile, drain tile and roofing tile.

C. C. Frampton, of Coleman, Tex., has been employed as the superintendent for the new plant. Mr. Frampton has been associated with the clay industry for forty years during which time he has established for himself an enviable record. Officers of the new concern are A. S. Stinnett, president; R. B. Boyle, vice-president; John S. McGurk, treasurer and W. C. Pope, secretary.

Machinery has been ordered and will arrive on the site within the next few weeks, it is stated.

To Operate Plant in Dallas, Tex.

The Texas Shoppe Brick Co., Dallas, Tex., recently organized with a capital of \$75,000, will operate a local plant for the manufacture of brick and other burned clay products. E. H. Jones and B. K. Howard head the company.

Wisconsin Brick and Tile Company Organizes

Articles of incorporation were filed in the office of the Registrar of Deeds recently by the Falls Brick & Tile Co., of Sheboygan Falls, Wis. The company is organized for the purpose of manufacturing and selling brick, tile and other clay products, the purchase and sale of fuel and other property that may properly be bought and sold for the advantage of the concern. Capital stock is placed at \$50,000 and is divided into 500 shares, to be sold at \$100 each. Messrs. Adolph O. Wachter, Charles A. Wachter and Raymond Wachter are given as the incorporators.

To Build Brick and Tile Plant in Ontario

A new brick and tile plant is to be built near Windsor, Ont., it is said. W. G. McCrimmore, 667 Hancock Ave., West, Detroit, Mich., owns 167 acres of clay land on the Canadian Pacific Railroad about eight miles from Windsor on which the plant is to be erected.

Montreal Building 1,700 Brick Houses

Work is to begin on the construction of 1,700 six-room houses in Montreal, Can., immediately. The contract for the construction of these houses was recently let by the city of Montreal to the Anglin Norcross Co., of that city. The houses are to be sold for about \$6,000 each on easy terms to lot owners. They will be two story buildings, 22x30 feet and all of brick. The total cost of the project will exceed \$10,000,000.

Saskatchewan Developing Clay Deposits

Speaking of the need for the development of a clay products industry in Saskatchewan, Hon. C. A. Dunning recently stated:

"It is not generally known that many lines of crockery are now being made of Saskatchewan clays, and are finding a ready market in Eastern Canada. The raw clay is mined in this province and shipped out for manufacture. If such products can be marketed successfully as far east as Montreal, then it is reasonable to expect that a local concern, properly organized and with adequate capital, might in a few years secure a fair proportion of the markets of at least Western Canada. This market alone is well worth cultivating. In 1920 Western Canada used well over \$28,000,000 worth of clay products in addition to its share of \$4,000,000 worth of crockery imported into Canada from the United States. With facts such as these," said Mr. Dunning, "we feel the department would fail in its duty were we not to devote some special effort toward the assistance of those clay plants already in existence, as well as the development on a broader scale of such a valuable resource. Why should we be importing building materials at great expense when the very best of such materials are undeveloped at our very doors?"

* * *

Buy Brick Plant at Whitby, Ont.

T. G. Deverall and D. L. Cousens, of Whitby, Ont., have purchased the Whitby Brick & Tile Co., together with twenty acres of land. The new owners will start operations immediately.

* * *

Paving Brick Cheaper Than Wood Block

Hamilton, Ont., is to use brick on York Street. E. R. Gray, city engineer, stated that the saving would be \$1 per square yard compared with wood block.

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Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
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Improvement in Pyrometer Construction

It is generally understood by all users of Thermo-Electric Pyrometers that the millivoltage or e. m. f. developed by a thermo-couple is dependent on the difference in temperature between the hot and cold ends of a thermo-couple. To secure accurate measurements of temperature, it is therefore necessary that the cold end of the thermo-couple be maintained at a constant temperature or the instrument must be compensated for the changes in temperature at the cold junction of the thermo-couple.

It is common practice to use what are known as extension or compensating leads, formed of material similar to the thermo-couple, which will transfer the cold junction from the binding posts of the thermo-couple to a distant point. Heretofore, it has been necessary to locate the cold junction at the end of the extension or compensating leads in a cold well in the ground or in a compensating box, where the temperature can be maintained constant.

The Brown Instrument Co., however, has overcome these troubles and inaccuracies by making a new Thermo-Electric Pyrometer, which is automatically compensated in the instrument for changes in cold junction temperatures and which includes means of setting the pointer of the instrument to zero in the usual manner.

In this instrument the extension or compensating leads are brought to the meter. Changes in temperature at the end of the extension or compensating leads also take place in the meter



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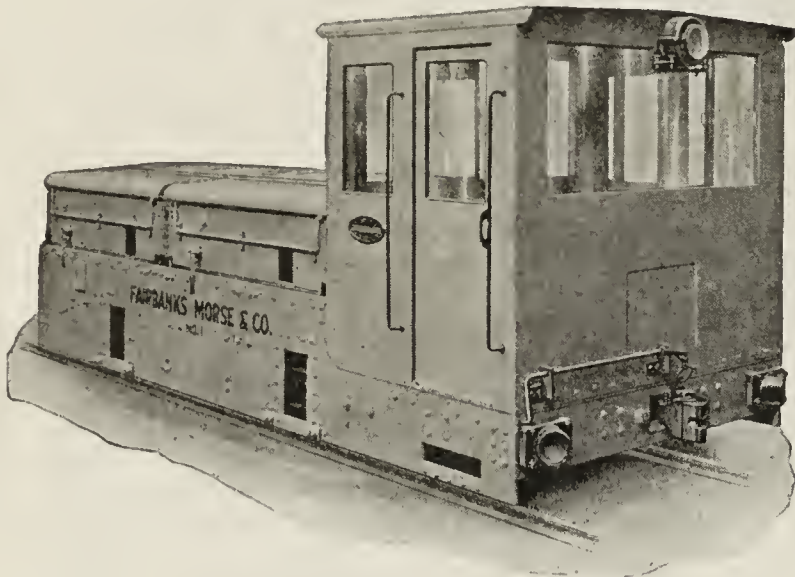
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(3)



itself, which can be compensated for this change in temperature.

There are two methods by which this compensation can be easily secured. A portion of the scale of the instrument may be mounted on thermostatic material and moved, dependent on the change in temperature of the meter and in this way automatic compensation may be secured. Only a portion of the scale is moved and an index on the other portion of the scale denotes the normal zero of the instrument.

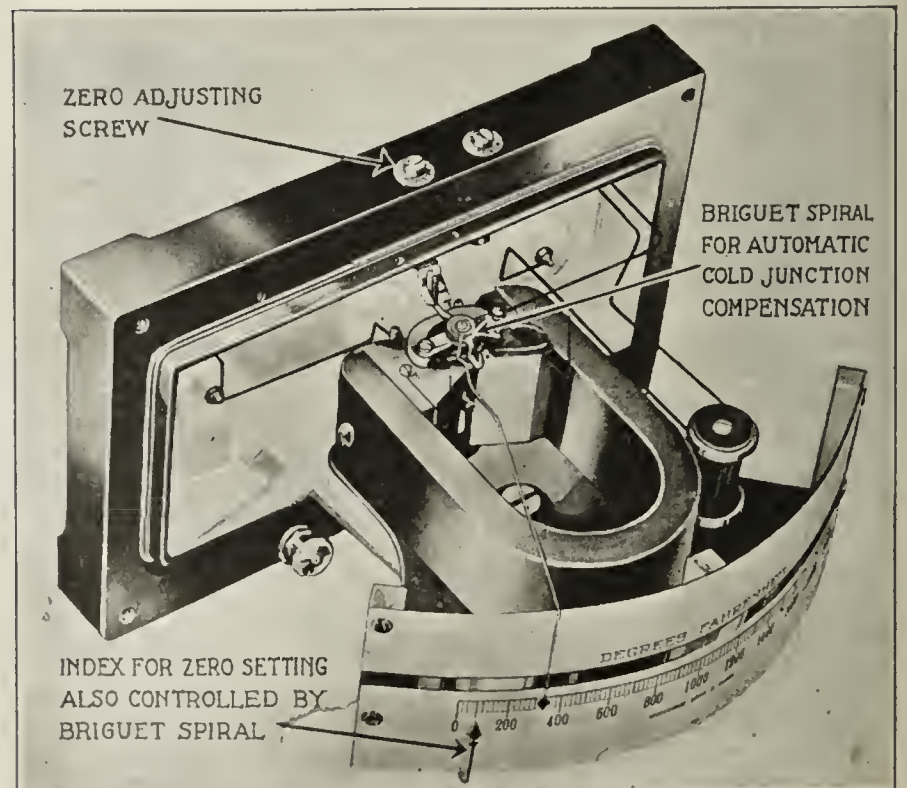
A Briguet spiral which consists of a compound strip of two metals of different coefficients of expansion similar to that used by Darling, may be mounted in the instrument, controlling the springs and moving element directly, and a second index controlled by thermostatic metal may be mounted on the scale. This index works with change in temperature exactly in relation to the movement of the pointer controlled by the Briguet spiral attached to the moving element.

It is only necessary to bring the compensating or extension leads from the thermo-couple to the instrument. After mounting the instrument, the instrument pointer is set by the zero adjuster to correspond with the index on the scale. If the values for a thermo-couple have been determined based on a cold junction of 75 deg. Fahr., the index will indicate 75 deg. Fahr., provided the instrument is subject to this surrounding temperature. If the instrument pointer does not correspond with this index, it is set accordingly. When the temperature surrounding the instrument and the cold junction of the end of the compensating leads at the instrument rises to 90 deg. Fahr., the index automatically rises to 90 deg. Fahr., and the Briguet spiral attached to the instrument pointer causes it to move up to 90 deg. Fahr., automatically adjusting for the temperature of the cold junction of the thermo-couple.

Any number of thermo-couples with their extension or compensating leads can be brought to the one instrument having this automatic compensation. Likewise, recording instruments can be equipped with this automatic compensation and means for setting the pointer to zero.

This is an improvement on the method of cold junction compensation developed by Darling in England, in 1909, and an improvement on a few subsequent developments for automatic cold junction compensation brought out since that time. These former methods afforded no means of setting the instrument to zero. It is customary on all electrical instruments, including Millivoltmeters and Pyrometers, to supply a zero adjuster to enable the user to set the instrument to zero, provided the zero has shifted, due to jars in transportation or with continual service. The Brown method is the only one which embodies this most necessary feature. Darling's device was never used to any extent because it was evident that unless an instrument had a means of setting to zero, serious errors might result in the use of the instrument.

This improvement in Thermo-Electric Pyrometers will be appreciated by the main users of these instruments, who are confronted with the difficulty of maintaining a constant cold junction temperature. Those familiar with this difficulty will also appreciate the necessity of having a means of setting an instrument to its normal zero, which is afforded in the new instrument.



Interior View of Brown Compensating Pyrometer.

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decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

LANDIS GIVES CHARACTER TO CONSTRUCTION

WITHIN THE PAST fortnight, Judge Kenesaw Mountain Landis handed down his decision as arbiter in the building wage controversy in Chicago, an event which has been eagerly awaited by the construction industry thruout the country. When the Judge first undertook to straighten out the tangle it was expected that his decision would be forthcoming within a short time. Altho it took three months of steady work the text and details of the decision proved it was well worth waiting for. The importance of the decision is not so much in the wage scale fixed by the prominent jurist, altho that is of considerable importance. The fundamental worth of the award rests in the agreements made under the Judge's supervision of working conditions; in the breaking down of old and vicious agreements which tended to stifle honest competition and increase the cost of building to the public.

Everyone agrees that the entire building industry has long needed the thoro house-cleaning which Judge Landis has achieved for it in Chicago.

The unimpeachable character of Judge Landis and his reputation for honesty and impartiality led to his selection as arbiter. These qualities also precluded any possibility that he would countenance in the agreements anything questionable before the law and approaching an invasion of public welfare. Public interest was a prime consideration in all instances. For these reasons, the agreements will be studied by employers and labor the country over and will doubtless be taken as patterns for other agreements in many localities.

In another part of this issue the entire text of the decision will be found, and we print it for two reasons first as an item of current news of far reaching importance and secondly with the suggestion that each manufacturer give it as wide publicity in his own territory as possible. It can well be called The Declaration of Independence of the construction industry. It is equally fair to both sides of the controversy, and ought to be read by every person in the country if possible.

The local newspapers will be glad to publish the entire decision if they have not already done so, and we suggest that each manufacturer see that the papers

of his district are supplied with a copy. No doubt the conditions existing in Chicago were worse than in most sections of the country, but in many places some of the practises that have stifled construction in Chicago have been followed elsewhere, with corresponding detrimental results, and the manufacturer of clay products has suffered a curtailment of the business that he should have been doing.

For purely selfish reasons every clay products manufacturer should see that contractors, building supply dealers, the workmen of the building trades, and the general public should become familiar with the decision of Judge Landis.

Judge Landis has rendered the nation a service of inestimable value by going to the heart of the matter and in patiently working out with labor and employers a set of agreements that takes out the stain in the building industry.

HOW WILL YOU MARKET YOUR PRODUCT?

EVENTUALLY every clay manufacturer will have to choose one of two methods of disposing of his products. He will have to take care of the distribution himself and employ a force of salesmen who will find an outlet or he will have to declare for the 100 per cent. dealer cooperation policy. Owing to the growing strength of building supply dealers and their improved principles and methods, this situation is becoming more and more apparent.

In this issue is described a system just being instituted by a large manufacturer of clay products. The officials of this concern recognized the truth of the initial statements of this editorial and after careful and deliberate consideration have made their decision which may be learned by the complete reading of the article in this issue.

The systematic thought and method of going into the matter is worthy of anyone's attention. We know of no campaign ever made by a clay products concern that goes into the problem of distribution as thoroly as that of the concern whose plan is told in this issue of *Brick and Clay Record*.

The plan is thought out even to the minutest detail and while new to the clay industry, is not a theory or impractical plan. It was designed by a man

with wide experience in this particular field of distribution endeavor.

The well-known clothing house of Hart, Schaffner & Marx has used a similar plan with great success, for years. The plan gives much food for thought and deserves the attention of every manufacturer.

This gives the editors an opportunity to reiterate a contention often expressed in these columns, namely, that the success of cement interests, lies largely in the wide distribution of their product. You can go into the remotest corner—any Hick town in the country, order a bag of cement and in fifteen minutes' time you will have it. When clay products are distributed as widely and can be obtained as easily, then and only then will the consumption of clay products increase materially and substantially.

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CLAY BRICK VERSUS CEMENT

UNDER THE CAPTION of "Scientific Tests Stamp Cement Brick Better than Clay" the daily press has described tests made at the Columbia University, New York, wherein it is reported, it was found that cement or concrete brick with mortar forms a more homogeneous monolith than the various kinds of clay brick now in use and hence forms stronger masonry.

With clay brick masonry giving a strength or factor of safety far greater than is actually required, the importance of this finding fades into but little significance. You could build a masonry wall of iron blocks that would be still stronger but who in thunder wants this strength and who wants to expose a cold, non-attractive iron wall to the public eye? Similarly, with cement or concrete brick.

The elements of beauty, durability and comparative costs are the ones which will determine the popularity of any brick. If concrete, cement or any other brick can measure up to clay brick in these features then clay brick will find keen competition. However, to say that some other brick is stronger than the burned clay product means practically nothing as far as utility is concerned, inasmuch as clay brick has sufficient strength for all structural purposes.

One might say that it is safer to walk from Chicago to New York than to take the "Twentieth Century," but whoinell wants to walk?

LANDIS CLEANS HOUSE *in* BUILDING INDUSTRY

*Well Known Federal Judge Hands Down Decision
in Chicago Building Tangle—Fixes Wage Scale and
New Agreements—See Building Boom as Result*

AFTER THREE MONTHS of waiting, anxious waiting by the building trades, contractors, architects, the public and every business man in Chicago, and in fact thruout the country, Judge Kenesaw Mountain Landis at length reached a decision regarding the building controversy in Chicago. He has vigorously cleaned and swept all the filth from the corners where were bred the germs which made the construction industry a diseased thing in Chicago.

It is an open secret that hundreds of towns and cities thruout the country were awaiting his verdict and that his wage awards will be taken as a standard by which to measure their own findings in similar long-standing disputes. Even in European cities considerable interest was manifested in the Chicago building controversy.

ESTABLISHES NEW SET OF AGREEMENTS

Tho the establishment of wage scales consistent with present business and living conditions was extremely important, what is far more important and of much more far-reaching influence is the breaking down of old and vicious agreements and practices which had gradually been formed thru the years as both labor and its employers sought to gain advantages over each other without regard to the harm which might be done the industry as a whole.

In this regard the judge's decision is a masterful document which will go far toward reestablishing public faith in construction. Such rules as eliminating the prohibition by the unions of non-union-made materials and forbidding the restriction of a workman's daily output, added to the actual reductions in wages, will effect a drop in construction costs of approximately 20 per cent.

Had Judge Landis been content with reducing wages 20 per cent., the amount asked, without changing any of the agreements and evil practices, the reduction in the ultimate cost of building would have been but six or seven per cent.

CARPENTERS REMAIN OUTSIDE

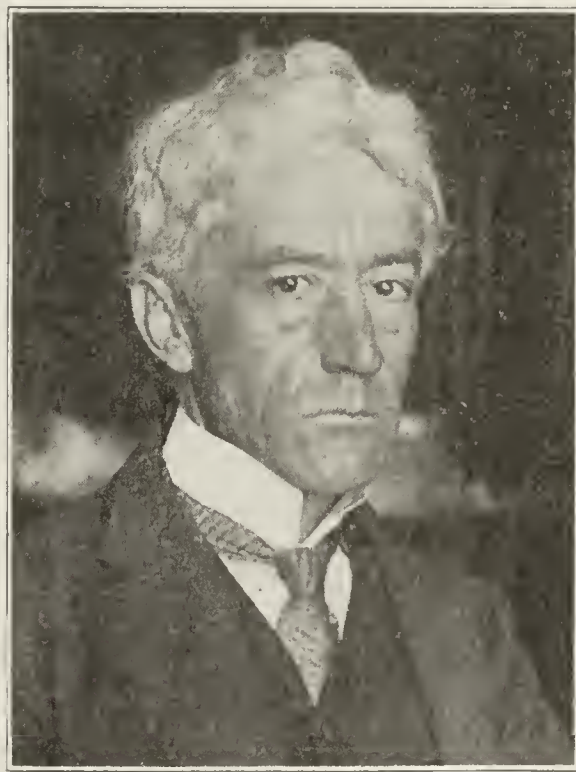
Developments following the decision by Judge Landis show that the employers are ready to use the club given them by the Landis agreements, aided by public opinion, to make the building trades, even those outside of the agreements, return to work under the arbiter's rulings. Failure of the trades to abide by the decision of the judge could mean nothing less than a declaration of an open shop by the contractors. Realizing this all trades with the exception of the carpenters decided to return to their jobs. Regarding the carpenters, that trade stands solidly for \$1.25 per hour and the two employers' associations have declared an open shop, and notified their members to employ any carpenters at not more than \$1 per hour. This is the rate which Judge Landis decided as fair and just. William Schlake, president of the Illinois Brick Co., and manager of the Associated Builders, says: "Many of the capenters are willing to work for \$1 an hour, but their officials will not let them. We are

thru with them." In regard to Judge Landis' decision Mr. Schlake says:

UNIONS WANT REHEARING

"Judge Landis' decision is absolutely just and fair. He has rendered a great service not only to those connected with the building industry but also the general public. I feel gratified at his verdict."

With the exception of one or two trades there is almost general dissatisfaction among the unions with the arbiter's decision. When the announcement of the decision was first made workmen in great numbers and on scores of jobs laid



JUDGE K. M. LANDIS.

down their tools declaring they would not work for the wages prescribed. Many jobs were absolutely at a standstill. The unions asked immediately for a rehearing, which Judge Landis refused to grant unless the men consented to work under the new agreements in the meantime. Since the unions have now decided to abide by the decisions pending a rehearing the judge will in all probability consider their request and will reconsider the question in the near future.

The decision of Judge Landis goes straight to the heart of every outstanding disagreement between labor and the builders, deals smashing blows at every feature of discrimination and

injustice that has kept these two factors at swords' points for years back, and invites all unions and employers not directly participating in the decision to consider the principles enunciated as a fair basis for their own further negotiations.

Briefly the important points in Judge Landis' decision may be summed up as follows:

"The opening of the Chicago territory and the use by union workers of both union and nonunion made materials. This permits the contractor now to put up the so-called knocked down or ready made houses.

"Prohibition of strikes and lockouts.

"An invitation to all employers not members of the association to participate in the benefits of the award by paying the same fees.

"Prevention of discrimination by the unions against any employers whether parties to the agreement or not.

"Prohibition of limitations on the amount of work any man may do.

"Establishment of the right of a nonunion man to work side by side on the same job with a union man and the employment of nonunion men whenever there is a scarcity of union help.

"The settling of the overtime question by granting time and a half for overtime work up to two and a half hours after quitting time, and double time after that. This last also covers Saturday afternoons, Sundays and holidays.

"Shift work is to be paid for at the regular day rate. All restriction as to the use of machinery, methods or appliances designed to speed the work is removed. Any trade may be performed by any other trade at the discretion of the employer on any task not occupying more than thirty minutes.

"Under the new ruling the foreman is not answerable to the union, but to the employer, whose agent he is. Employers are granted the right to work on their own jobs if they wish. Men have been slugged in Chicago in the past for painting their own houses and have been barred from working with or assisting any artisan whom they employed.

"In announcing the wage cuts, Judge Landis expressed disapproval of the wartime policy of a flat scale for skilled labor and a flat scale for unskilled. This system, he held, is in 'total disregard of skill, hazard, length of apprenticeship, and necessary loss of time due to weather and seasonable demand.'"

THE NEW WAGE SCALE SET BY JUDGE LANDIS' DECISION

Just what the new wage scale in the building trades looks like as set forth by Judge Landis, and how it compares with previous figures, may be seen at a glance from the following tabulation:

	New scale per hour	Old scale per hour
Plumbers	\$.95	\$1.25
Bricklayers	1.00	1.25
Boilermakers	1.10	1.25
Steamfitters .....	.95	1.25
Hoisting engineers—For operation of high pressure boilers and engines, cable ways, derricks, pile drivers, cranes and cable hoists.....	1.10	1.25
Hoisting engineers (all others).....	.85	1.25
Tile layers (fire proofers)	1.12½	1.25
Cement finishers .....	.85	1.25
Composition floor finishers .....	.97½	1.25
Cement workers (laborers—Local No. 76).....	.72½	1.00
Stone derrickmen .....	.90	1.25
Drain layers .....	.82½	1.25
Electricians	1.10	1.25
Gas fitters .....	.95	1.25
Ornamental iron workers .....	.95	1.25
Structural iron workers.....	1.05	1.25
Common laborers .....	.72½	1.00
Caisson men (windlass and niggerhead men)....	.85	1.12½
Caisson men (diggers and ladders).....	.97½	1.25
Laborers (plasterers) .....	.78¾	1.06¼
Composition floor laborers.....	.72½	1.00
Lathers	1.00	1.25
Machinery movers and riggers.....	.85	1.15
Marble setters' helpers .....	.70	1.00
Marble setters .....	.87½	1.25
Marble rubbers and polishers.....	.75	1.00
Seagliola rubbers and polishers .....	.75	1.00
Mosaic and tile workers	1.02½	1.25
Mosaic and tile helpers.....	.70	1.00
Pipe and boiler coverers.....	.95	1.25

Composition roofers .....	.92½	1.25
Slate and tile roofers.....	1.00	1.25
Stone cutters	1.02½	1.25
Stone carvers	1.25	1.25
Stone planer men .....	.82½	1.05
Terrazzo mechanics .....	.95	1.25
Terrazzo mechanics' assistants.....	.80	1.00
Terrazzo helpers .....	.70	1.00
Tuck pointers	1.00	1.25
Sprinkler fitters .....	.92½	1.25
Sprinkler fitters' helpers .....	.70	1.00
*Excavating labor (Local No. 225).....	.47½	.65
*Excavating labor (wall men—Local No. 225)....	.55	.75
Composition roofer teamsters	30.00 per wk.	37.00

(*These rates are fixed in accordance with express agreement with employer and employees.)



WILLIAM F. SCHLAKE.

Seven unions—the carpenters, elevator constructors, plasterers, sheet metal workers, painters, glaziers, and fixture hangers—were not signatories to the arbitration agreement. The following tentative awards were made by Judge Landis if at any time before November 1, 1922, these unions wish to enter the agreement under certain specifications laid down in the award text:

	New scale per hour	Old scale per hour
Carpenters	\$1.00	\$1.25
Plasterers	1.10	1.25
Elevator constructors .....	.95	1.25
Sheet metal workers .....	.95	1.25
Painters .....	.95	1.25
Glaziers .....	.95	1.25
Fixture hangers	1.00	1.25

Complete Text of Landis Decision

"This is an arbitration of wage differences between employers and employes in building construction. The agreement was entered into between the Building Construction Employers' association, the Associated Builders, and the Chicago Building Trades council, after several weeks of idleness in the industry, and authorized the undersigned, as umpire, to fix the wages to be paid in the several trades represented, the award to become effective when made and remain in force until May 31, 1922.

"It was also agreed that on or before Feb. 1, 1922, the umpire shall determine the rates to control from May 31, 1922, for the period of one year. Further, there was a provision that the principles and conditions of all trade agreements shall be made as nearly uniform as possible, and the parties stipulated that should any trade arbitration board be unable to agree upon any provisions of their agreement involving conditions, working rules, etc., such dispute should be submitted to the umpire for his final decision. This latter provision was most important, for it put it in the hands of either the employer or the employee to free any trade from all detrimental working rules and conditions by the simple process of withholding assent to such provisions.

BUILDING "IN BAD REPUTE"

"It is the violation of no confidence to say that building construction had gotten into bad repute in this community. There was a general disposition to keep away from it as a thing diseased. Capital avoided it. The wise dollar preferred almost any other form of activity or no activity. And this applied to the whole range of building construction, from the cottage to the skyscraper.

"The attitude of the public, added to the profound commercial and industrial depression generally existent, resulted in a virtual famine in housing accommodations and brought about the idleness of many thousands of men willing to work.

"It was in view of these conditions that the umpire conceived it to be his duty to aid these parties to rehabilitate the industry in the esteem of the public, the great unrepresented party to this arbitration, but nevertheless the one upon whom the consequences of the award would fall.

WAGES NOT ALONE TO BLAME

"This loss of the public faith was not due entirely to the wage question. The mere making of a wage award would not have placed the industry on solid ground. Reliable testimony showed that a 20 per cent. reduction in wages, other conditions remaining the same, would produce but a 6 or 7 per cent. reduction in building cost.

"The real malady lurked in a maze of conditions artificially created to give the parties a monopoly and in rules designed to produce waste for the mere sake of waste, all combining to bring about an insufferable situation, not the least burdensome element of which was the jurisdictional dispute between trade members of the same parent organization.

"It is not possible that all has been done that might have been done, nor that no errors have been made in these agreements, but it is my judgment that the numerous corrective provisions that have been included in the more than forty trade agreements, if carried out in good faith, will produce savings and economies to the public far greater than would have resulted from a 20 per cent. wage reduction, other factors and conditions remaining the same.

"Some of the trades, such as the carpenters, plasterers and painters, have seen fit to hold aloof from this arbitration. Therefore in applying a wage scale to the new conditions of the trades that are here, I do so with the distinct understanding that those trades that have refused to come in and revise their agreements along just and reasonable lines as most of you have done, will not receive your support of their wasteful and subversive practices, for this would be to permit them to capitalize your good work to their advantage and to your detriment.

"The highest dictates of both morality and interest require that you adopt and adhere to this policy. To illustrate what I had in mind in this connection I refer you to the window glass industry, said to be controlled in Chicago by six firms.

"The representative of the Pittsburgh Plate Glass Company and the president of the Glaziers' union appeared here in behalf of his trade and insisted upon a working agreement containing a provision that no glazing should be permitted to be done in the shop; that it should all be done on the building or job. This attitude of these two interests was plainly hostile to the public welfare, particularly the owners of small homes. Certainly that trade has no call on you to support it in this unconscionable practice.

DEFINES UNIFORM AGREEMENT

"You have made what is called the 'uniform agreement,' applicable to all trades. Each separate trade agreement expressly adopts this uniform agreement and provides that it shall control as against any conflicting working rule. In carrying out the declared purpose of preventing strikes and lockouts and other waste and avoidable expense, annoyances, and delays, and for the purpose of making building costs as low, stable, and certain as possible, consistent with fair wages, this uniform agreement

provides for the peaceful adjustment of disputes by arbitration, subject to appeal to the national board of jurisdictional awards, with whose decisions all parties agree to comply; that you will not stop work individually or collectively under penalties prescribed, except only when an owner attempts to construct a building with nonunion men while putting up another building on which you are employed, and when the employer fails to pay employees for work done; that in case of scarcity of help nonunion men may work with union men until such time as union men may be obtained; that any journeyman may use in his work the tools of any other trade; that small tasks of not over thirty minutes' duration in any one day belonging to any trade may be performed by any other trade at the discretion of the employer; that overtime work during two and one-half hours beyond the regular working day shall be compensated at one and one-half times the regular wage; that overtime work beyond this, and work performed Saturday afternoons, Sundays and holidays shall be paid at double the regular rate; that shift work will be paid at the regular day rate; that contractors not affiliated with these associations may avail themselves of all benefits of these agreements by either joining the association or paying the regular dues and fees that members pay; that the union will provide men to any contractor, whether a party to any agreement or not, under the rules and at the wage provided by these agreements.

EMPLOYERS' RIGHTS SET FORTH

"It is further expressly agreed and stipulated that there shall be no restriction as to the amount of work a man may do, nor against the use of machinery, methods, or appliances, nor against any raw or manufactured material except prison made. Employers may employ or discharge whomsoever of the union they please, and employees may work for whomsoever they see fit, and the foreman, if any, is to be exclusively the agent of the employer.

"Each of that group of trades that have entered into agreements with the Associated Builders and sixteen of those that have signed up with members of the Building Construction Employers' association agree that nothing shall prohibit an employer or one member of a firm of contractors from working on his or their own jobs.

"Employers and employees of some trades acting in cooperation have refused to the public the benefit of the economy that would result from the operation of this provision, and three trades require work to be done by skilled men that laborers or helpers might do. Therefore, in fixing the wage in these trades I have been obliged to consider the waste thus occasioned. If at any time before Nov. 1 next any of these unions notify me of their willingness to change their attitude in this respect, I will advance their wages accordingly as the rule is applied in the present award to other trades.

PLEASED AT TRADES' STAND

"It is a matter of very deep gratification that all trades have eliminated jurisdictional matters by providing that 'all work undertaken by the parties of the first part (the employer) shall be done by the parties of the second part (the employees) subject to the decisions of the "National Board for Jurisdictional Awards," thus making the employer responsible for the kind of work he may contract to do and placing on him the initiative for settling disputes between unions as to the kind of labor they shall perform according to the provisions of the uniform agreement and reference to the national board for jurisdictional awards.

"The wages in force at the time work stopped in May were \$1.25 per hour for skilled men and \$1 per hour for common labor. These rates had obtained in Chicago during 1920 and apparently had been originally fixed in total disregard of skill, hazard, length of apprenticeship and necessary loss of time due to weather and seasonable demand. Theretofore in Chicago and elsewhere these considerations had influenced and controlled the matter as they have since and do now in other localities.

TERMS THEORY ERRONEOUS

"Manifestly this theory was fundamentally erroneous and in violation of the principles heretofore announced in this proceeding. Having in mind these principles the rates of the highest skilled trades such as the bricklayers have been reduced approximately 12½ per cent. below the rate of 1920 and the wages for all other trades have been scaled accordingly. While it may be true that since the existing scale was fixed living costs have been reduced approximately 20 per cent. and that the rates here announced may impress persons unfamiliar with these trades as high when compared with wages paid in other industries it must be remembered that in the building trades workers are limited by weather conditions and other causes to from 150 to 200 days work per year.

"The following trades are not in this arbitration: Carpenters, elevator constructors, plasterers, sheet metal workers, painters, glaziers, fixture hangers.

"Early in the arbitration a tentative carpenters' agreement was submitted. That document is at variance with the new uniform agreement in several particulars. It provides double time for all overtime; it requires eight hours' pay for seven hours' work shift time; the work covered by the agreement harbors perilous jurisdictional disputes with other trades; it provides that should any other trade under control of the party of the first part do any work claimed by the carpenters then that work shall stop until the matter is taken up by the joint arbitration board.

"Should this agreement be rewritten according to the uniform agreement, uniform suggestions and principles the wage would be fixed on the same scale as others at \$1 per hour.

"If an agreement had been submitted by the elevator constructors in harmony with the uniform agreement, uniform suggestions and principles an award would have been made of 95 cents per hour.

FLAYS PLASTERERS' AGREEMENT

"The plasterers are not in this arbitration. Early in the proceeding a document expressing the agreement of the parties was presented for the advice of the umpire respecting legal questions. That document has few of the safeguards of the uniform agreement. In it are many provisions designed to produce waste, increase cost, and monopolize the business.

"The foreman is made subject to union rules; rules are laid down to be obeyed by property owners contracting with plastering contractors; it assumes to extend the plasterers' jurisdiction beyond the fair limits of this; it requires an employing plasterer to register with the union semi-annually and union men may work for no contractor not thus registered. The effect of the foregoing is to subject the public to union rules apparently in exchange for the power of the unions in forcing all plastering regardless of the nature of the structure into the employers' hands.

"The foreman is required to ascertain whether employes are in good standing in the union, and to collect fines and dues for the union by withholding money from wages due for work. Overtime is fixed at double the rate, or \$2.50 an hour, and the agreement provides that continuous overtime (apparently shift time) shall be given to those not regularly employed.

BARS EMPLOYERS FROM WORK

"The agreement limits to union men the right to use tools, thus prohibiting any employer from even doing patch work on his own job. It is required that all cast work except in limited amount must be done at the building by members of a sister union. It is also required that ornamental plastering shall be contracted for by the employing plain plasterer under penalty; that plasterer will not work on the building where the ornamental plastering is let to another contractor; that the original contractor must finish the job or any part thereof for which he may have a contract; that no plasterer will work on such a job for any one except the original contractor, etc., etc.

"Should these parties eliminate these vicious provisions and make a clean agreement—and I'll add: 'To keep out of jail'—in line with the uniform suggestions and principles announced, a fair wage would be \$1.10 per hour.

SHEET METAL TRADE STAYS OUT

"The sheet metal trade is not in this arbitration. An agreement appears to have been tendered the union by the contractors based on the uniform agreement and refused by the union, which in turn appears to have tendered an agreement to the contractors. This latter document does not adopt the uniform agreement and is in conflict with it. The 'work covered' is written as a definition of jurisdiction and therefore is pregnant with controversy. Double pay is required for overtime; shop rules and regulations are included. These have no place in agreements covering building trades. Should this agreement be rewritten in harmony with the uniform agreement, uniform suggestions, and principles a fair wage rate would be 95 cents per hour.

PAINTERS ALSO EXCLUDED

One section provides expressly for a sympathetic strike; another expressly authorizes the union to call a strike on any shop for any reason that may appear just to the union.

"It is further provided 'that all sash, frames, and screens must be primed, painted, and glazed on the job.' The contractor is expressly forbidden to handle tools, scaffolding, or material, with the exception that this restriction does not apply to contractors who are members of the union. The union is authorized

to cancel the agreement at any time for any alleged violation. Overtime is paid for at double the regular rate, or \$2.50 per hour.

"Should these vices be eliminated and an agreement covering this trade be prepared in accordance with the uniform agreement, uniform suggestions, and principles, a fair wage rate would be 95 cents an hour.

"The glaziers and fixture hangers were in the arbitration, but because of certain impossible conditions insisted upon by both employers and employes, obviously with the sole purpose of effecting a monopoly and necessarily occasioning waste, the umpire refused to fix a wage. Should these agreements be rewritten in accordance with the uniform agreement, uniform suggestions and principles, and not in violation of public law, a fair award would be to the glaziers 95 cents per hour and to the fixture hangers \$1 per hour.

FLAYS MATERIAL CONTROL

"In conclusion a word about the building material situation. This is intimately and directly involved in the question with which we have been struggling. The testimony before the Dailey committee disclosed that a very large proportion of all building material is subject to artificial control.

"In utter contempt of state and federal penal codes, firms and corporations controlling the various lines have associated themselves together to fix and maintain prices. Business is divided up among the members of these associations and adherence to the allotments is enforced by penalties, reimbursements, and other devices denounced by the criminal law.

"This atrocious situation is beyond the reach of the umpire, but the activities of grand juries and prosecuting officers give me faith that real war is being waged against this species of criminality."

* * *

Test Fire Resistance of Brick Panels

In its Technical News Bulletin No. 52 the United States Bureau of Standards of the Department of Commerce says the following concerning fire tests of brick panels:

"One fire test of an eight inch solid restrained panel of eastern brick and two tests of eight inch hollow unrestrained panels, one of eastern and one of western brick, were made. Except that the eastern brick panels did not fuse on the exposed side during the test, no large difference in behavior between panels of the two kinds of brick were noticed. The unrestrained panels were stiffened with a brick pilaster at each end. The top corners of these panels deflected outward a maximum of six inches, and while it was apparent that the factor of safety on stability was quite small, no collapse occurred."

* * *

Business Better Than Prior to 1917

The General Electric Co., which is the largest electric manufacturing and supply company in the country has issued a circular to stockholders which states among other things that their business is in very good shape and that orders are being received at a rate in excess of any year prior to 1917. Since they supply every line of business in the country their statement is bound to reflect the general buying power, and will help to disprove statements that we hear on all sides regarding the present condition of business.

* * *

Signs of the Times

The monthly foreign trade summary, issued by the Department of Commerce for August, shows that our exports for August are the highest since March, 1921. For the eight months ending August 31, our exports totaled \$3,230,000,000 compared with \$5,475,000,000 for 1920.

Our imports for eight months ending August 31, were \$1,693,000,000 compared to \$3,995,000,000 for 1920. While this shows some decrease since 1920, it should be noted that the

exports for this year are 59 per cent. of the 1920 total, while our imports are only 42 per cent. of the 1920 total.

The postal department has also announced that the total receipts for postage for the month of August in 50 of the largest cities was 4.5 per cent. larger than the previous highest monthly record.

* * *

Paints Ideal Wall on Truck Body

A novel way to advertise the Ideal wall has recently come to our attention. The accompanying photograph shows how Gilliam & Co., of Richmond, Va., utilizes the dump body of its truck as a "walking billboard." The brick are painted



A Clever Way to Obtain Good Free Advertising is to Paint the Ideal Wall on the Body of Your Truck.

on the side of the box to show the appearance of that type of wall, at the same time giving an idea as to the method of construction. Such advertising ought to be quite valuable inasmuch as it costs practically nothing and is seen by a great number of different people.

* * *

"Movie" Shows Manufacture of Abrasives

The completion of a new educational motion picture illustrative of the mineral industry is announced by the Bureau of Mines. The "Story of Abrasives" shows the generation of hydro-electric power at Niagara Falls, its utilization for the production of carborundum and aloxite, and finally the numerous interesting applications of abrasives.

* * *

Observe National Fire Prevention Day

October 9 has been declared National Fire Prevention Day and is to be observed as such thruout the country. Too often people are inclined to be lax on the question of fire prevention and so it has become the custom to set aside October 9, which is also the date of Chicago's great fire, as a reminder to be on watch against this destroyer of life and property.

When it is taken into consideration that the annual fire loss of property is \$350,000,000 and loss of lives 15,000 we should strive to make every day of the year a fire prevention day.

* * *

C. B. M. A. Now Has 333 Members

The new booklet issued by the Common Brick Manufacturers' Association, giving the list of plants that are

members of the association contains the names of 333 manufacturers. Practically all the large and progressive manufacturers are members of the organization and are licensed to put on their product the peculiar trade mark which stamps the brick as being made by a member of the national organization.

* * *

1920 Silica Brick Output Gains

The refractory silica brick industry in the United States continued to make progress in 1920. The output in 1920, as estimated by Jefferson Middleton, of the United States Geological Survey, Department of the Interior, was 255,000,000 brick, valued at \$15,540,000, or \$60.94 a thousand, an increase of 18 per cent. in quantity and 32 per cent. in value as compared with 1919. The quantity marketed in 1920 was exceeded by that in 1917 and in 1918, when the stress of war caused an increase in the production of all refractories. The value in 1920 was exceeded only by that in 1918. The price per thousand in 1920 was the highest recorded.

* * *

Status of Paving Brick Industry Improved

Improved prospects for plant operations in the paving brick industry during the coming winter, over conditions which have prevailed the last few winters, are indicated by a recent questionnaire to members of the National Paving Brick Manufacturers Association, Maurice B. Greenough, secretary, announced recently. Replies from 71 companies having normal output of 4,570,000 tons show that 56 producers with an aggregate capacity of 3,630,000 tons expect to be in full operation during the next six months. Nine companies representing 639,000 tons report the prospects of operations as doubtful. Six companies only, with 301,000 tons capacity, expect to be shut down. Last winter approximately 60 per cent. of production was closed down.

* * *

Common Brick Outlook Growing Better

The current month's reports from 110 manufacturers of common brick in the United States indicate an improved condition in construction says the latest monthly digest of the Common Brick Manufacturers' Association. Altho stocks on hand are far in excess of orders, the increase in orders in relation to the stock is in about the ratio of three to one. This is the first month since the beginning of the year that the cold figures have revealed an actual upward trend in brick demand. On the side of opinion there also is improvement. A number of manufacturers have moved over from the column of "bad outlook" into the "fair outlook" column and a few even jumped into the "good outlook" column. Each manufacturer reporting is asked to record the coming month's prospects, and it is interesting to note that ten say "good," 35 "fair," 34 "poor" and only nine "bad."

The number of plants closed was less during August than the previous month while stocks increased somewhat. Prices have changed but little, the composite price in 110 reports being \$14.04. In the Southeast the tendency to sell at prices below manufacturing costs still prevails and in one southern state a price of \$6 per thousand has been quoted.

The Southern California or Los Angeles district continues to lead in activity. Money is plentiful there and there is a good industrial growth and a marvelous home building development. The Ideal wall continues to grow in popularity, more than 400 houses having been built with these walls during the past few months in Los Angeles.

MAKING DEALER VITAL COG *in* SELLING MACHINE

Chicago Fire Brick Co. Conducting Remarkable Campaign of Advertising Built Around Dealer—Strong Advocates of 100 Per Cent. Dealer Distribution Policy

Editor's Note—Mr. N. H. Burlingame, who is directing this campaign of the Chicago Fire Brick Co., is a man with considerable advertising experience. He is president of an advertising agency and as such has mapped out dealer campaigns for other products. This particular campaign was thoroly studied and every phase carefully gone over with the result that the plan is one of the most complete of any such ever promoted.

THE PAST WORLD WAR is in a way responsible for several new policies which the Chicago Fire Brick Co. has recently put into effect and which differ in some aspects from those of other firms in the industry.

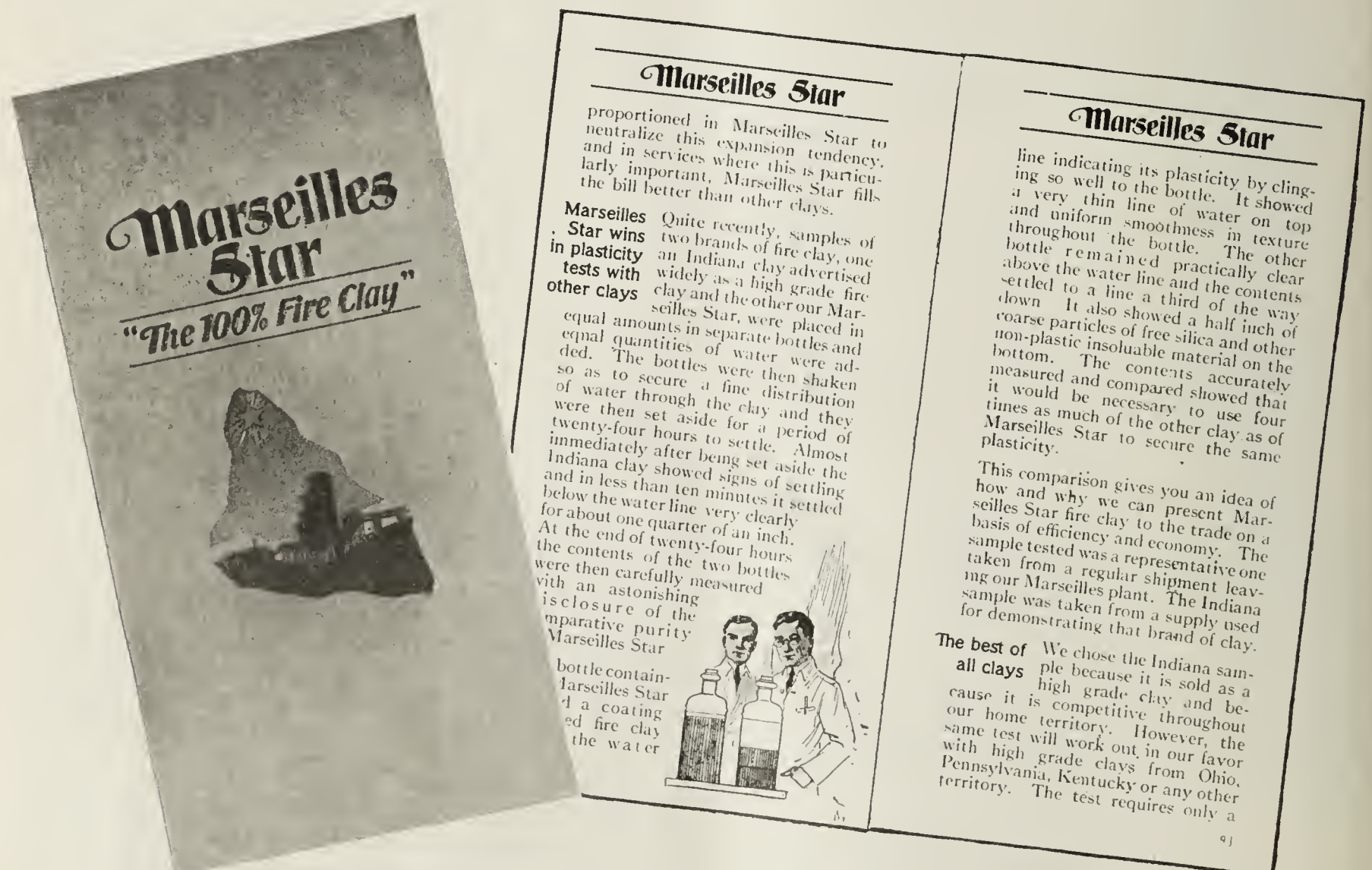
This firm, after having manufactured clay products for 20 years, was impressed with the tendency of buyers during the war to make the need for an article or the service received in connection with the article the paramount consideration when purchasing. It believes that in an industry where there is really no universal recognition of the difference between

"quality" and "price" there is a real opportunity to manufacture fire brick and other clay products strictly on the basis of quality and to educate the consumer to the economies in using such products.

QUALITY MAIN CONSIDERATION

This, therefore, has become the policy of the firm, that all products shall be manufactured on a quality basis with the sole object of producing the best article that manufacturing science of the industry can provide, to keep the price as low as possible, but after all to let the price be a secondary consideration to the real value of the article produced.

In attempting such a policy the need was quite evident for work among consumers of fire brick and hollow clay products to educate them in the real economy of buying goods of quality. This resulted in a decision to work out an extensive campaign to users, and the development at the same time of a plan of merchandising co-operation for dealers which will enable them to carry on the same sort of work for themselves and to tie up their work with that conducted by the company.



In This Picture Are Shown the Cover and Two Pages of a Booklet Which the Chicago Fire Brick Co. Sends to Its Dealers for Distribution to Consumers. This Particular Booklet Gives the Reasons Why "Marseilles Star" Earns the Title of "100% Fire Clay."



N. H. BURLINGAME.

The problem of working these things out was placed in the hands of N. H. Burlingame, a specialist on dealer sales, and president of the Chicago sales agency bearing this name.

WORKING ON PLAN MORE THAN A YEAR

All departments of the business have been co-ordinating their efforts toward the perfection of such a program. For over

a year the details have been under study with the result that this firm believes it has finally worked out a plan which is nearer cooperative perfection than anything of its sort ever launched in this industry.

In the words of Mr. Burlingame:

"Where a product is of such a nature that it can be readily adapted to dealer distribution, there is no question of the economy and general advantage in maintaining a strong dealer policy—if possible one of 100 per cent. distribution of the products thru the dealer, and this is just what we are doing.

DEALER SHOULD HANDLE BUT ONE LINE

"The one big mutual problem for manufacturer and dealer is volume of sales. To the extent to which a dealer divides his interest between two or among more than two similar lines, in that degree will he lose out on each of the lines he handles. It has been pretty well demonstrated in all lines of industry that a dealer can secure greater sales on one line which he handles exclusively than on several similar lines combined where he is pushing them all.

"We believe a dealer cannot properly represent a manufacturer where he divides his time among several similar lines, and we are certain that this is the consensus of opinion of manufacturers in all lines. The manufacturer, therefore, does not feel like giving the dealer the cooperation he could and would like to give unless the results of the dealer's efforts combined with such cooperation will result in a benefit to the line pushed. We want our dealers to handle our line exclusively, altho it is not absolutely necessary that a dealer do so to secure the benefit of our broad gaged sales cooperation.

COMPANY COOPERATES WITH DEALER

"In the proportion to which a dealer confines his attention to our line and puts a corresponding amount of effort behind it we owe him our good will and our cooperation in helping him to make money on the line.



THIS trade-mark appears on all CHICAGO FIRE BRICK COMPANY products—mainly that we may be identified with our goods and benefit thru your recognition of their superiority.

Our trade-mark is also a guarantee to you that every process in the manufacture of the product has been completed in our own plant with a precision and painstaking thoroughness that will be repeated in all subsequent stocks of the same article.

Our trade-mark therefore is your guarantee of quality in every product purchased from us on which it appears, and is a definite promise to you to make good to the fullest any deviation from this standard.

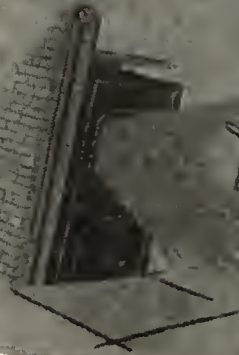
Economy in Boiler Settings

THE factor which determines the superiority of one fire brick over another is that of the economy in using the brick.

This element of economy in buying brick has, of course, the same application as in the selection of any other kind of merchandise. The cheapest is rarely the most economical, and in fact, as is the case with other manufactured articles, the cheapest brick usually turns out to be the most expensive in the end. On the other hand, the highest priced brick is necessarily the best.

A brick that costs you \$3 thousand and which lasts six is no cheaper than a brick that costs you \$70.00 a thousand and lasts a year.

ECONOMY IN BOILER SETTINGS



Another of the Booklets the Company's Dealers Distribute. and Contain Eight or Twelve Pages of Scientific Information

These Booklets Are Very Artistically and Attractively Designed Which Can Not Help But Arouse the Interest of the Consumer.




ELECTRIC FURNACE

"The World's Best Fire Clay Brick"




Highest Refractoriness
In actual test, ELECTRIC FURNACE fire brick will stand a temperature exceeding 3400 degrees Fahrenheit.

Maximum Fluxing Resistance
A correct chemical balance and a high grade finish and manufacture combine to resist fluxing action better than other brands.

Four Important Points of Superiority

Exceptional Strength
ELECTRIC FURNACE provides a maximum strength for supporting the weight of the superimposed brick under all conditions of temperature.

No Spalling and Creaking
The feature of ELECTRIC FURNACE, not found in any other brick, eliminates the destructive expansion and contraction tendencies met in other brands.

**AVOID
the
FREQUENT
SHUTDOWN**



EAGLE POINT LIME WORKS
Dubuque, Iowa

Perhaps one of the best things we have ever done for our customers was when we arranged to carry in stock ELECTRIC FURNACE—"The World's Best Fire Clay Brick".

ELECTRIC FURNACE, while they cost more than so-called "quality brands", but no more than the requirements for furnace linings and boiler settings better than any other brick manufactured. There is nothing to loose and everything to gain in using ELECTRIC FURNACE.



THE slogan adopted for ELECTRIC FURNACE fire brick is a simple statement of fact. ELECTRIC FURNACE, "the world's best fire clay brick," do not lay claim to superiority on the strength of any ONE element of excellence, but on their superiority covering the several basic requirements for furnace linings and other services involving severe and fluctuating temperatures. On EACH point ELECTRIC FURNACE excels—and competes for your favor.

EAGLE POINT LIME WORKS
Lime—Cement—Fire Brick
DUBUQUE, IOWA

KEEP PRODUCTION STEADY

**Cut Down the
Frequency of Fire Brick
Replacements**

From ten to fifty per cent of all fire brick replacements are unnecessary. They cost time, money and labor that could be avoided by the use of brick more suited to the peculiar requirements in your plant.

And the cost of these replacements is not in the price of the brick. Of far more expense to you is the loss of time of various personnel, the costly and unnecessary hardship worked on other equipment, the attention of men diverted from regular routine, and the cost of making repairs.

Cut down these replacements by using a brick that squarely meets the two fundamentals for superior service.

ELECTRIC FURNACE—"the world's best fire clay brick," meets the requirements for a high grade money-saving fire clay refractory better than any other brand of brick manufactured.

Your copy of "Economy in Boiler Settings" will tell you why. Send for it.

ELECTRIC FURNACE, "the world's best fire clay brick," do not lay claim to superiority on the strength of any ONE element of excellence, but on their superiority covering the five basic requirements for boiler setting service. On EACH point ELECTRIC FURNACE excels—and competes for your favor.



**A HAND-MADE
Fire Brick is Vital for
Many Reasons**

Top speed mechanical methods are all right for quantity production, but they will not answer the purpose in the manufacture of fire brick which have to meet out-of-the-ordinary requirements.

ELECTRIC FURNACE are hand-made. The bond once formed is not disturbed and the texture so essential for severe atmospheric conditions, and which is otherwise impossible to obtain in brick of such high quality, is secured. This hand-process provides the life and inward elasticity for which ELECTRIC FURNACE fire brick are so well known and which so admirably suits them to service in extreme and fluctuating heats.

ELECTRIC FURNACE fire brick are as uniform in size, texture and appearance as brick made by machinery. ELECTRIC FURNACE brick are the product of master workmen who do nothing but make (by hand) ELECTRIC FURNACE fire brick. In practice they are the most economical brick to use because they outlast all other brands, cutting down the frequency of fire brick replacements, reducing the cost of repairs, and eliminating much of the expense of time and labor involved.

ELECTRIC FURNACE, "the world's best fire clay brick," meet the requirements for a high grade money-saving fire clay refractory better than any other brand of brick manufactured.

ELECTRIC FURNACE

"The World's Best Fire Clay Brick"

ADVERTISING THAT CARRIES A CONVINCING TONE.

Several Views of One of the Folders Forming a Series of Dealer Helps, Ready for the Printer. This Advertising is Designed with a View to Interest the Consumer and to Carry a Message of Real Value to Him. The Dominant Note in All the Advertising is QUALITY; a Product Which is Not Necessarily Cheapest in First Cost But Will Prove a Good Investment in the Long Run. This Advertising is Prepared by the Chicago Fire Brick Co. for Distribution by Its Dealers and, as is Shown, the Dealer's Letterhead is Used on the Folder.

In the Picture Above the View on Top Shows the Folder Partly Closed, Displaying Four Arguments in Favor of "Electric Furnace" Brick. In the Center View the Picture on the Left is the Front, When the Folder is Closed; That on the Right is Another Section. The Bottom View is the Inside of the Folder When Fully Opened.

"We consider a dealer who does business on our line as a link in our sales and distribution chain, and the strength of this link is dependent upon how thoroly we each carry out our part of the obligation.

"Our new plan of cooperation recognizes the fact that when we deliver our products to a dealer on a stock order, our part in the sale is not completed until the dealer has resold the products to his customers. It is one thing to stock our line and quite another to make profits on it. We are more interested in having the dealer make profits on our line, than in selling him the goods in the first place. We shall certainly consider our dealers as part of our own business to be given the same attention and cooperation as we would have to give a branch office, because in reality, the dealer functions as a branch office for each manufacturer whose goods he handles.

PLAN OF COOPERATION

"Our Plan of Cooperation with our dealers is covered mainly by the following points:

"1. Dealers receive the benefit of an intensively advertised line of products. We are conducting a general advertising campaign to possible users of our products, to educate them in respect to the real economy in purchasing products of quality. Our mailing lists contain the names of practically all prospects for our materials. We reach these prospects thru direct mail advertising in the form of sales letters, pamphlets, booklets, broadsides, and so forth, and by extensive use of trade magazine space.

"This campaign is going on now full blast and is to be continued indefinitely. Just as it usually takes more than one call of a salesman to make a sale, so does it require more than a single advertisement or sales letter to create a favorable attitude for our products on the part of a buyer.

"This advertising is being confined to direct-by-mail messages and trade paper advertising because we believe these forms go most direct to the users of our products—the dealer's own

customers—and that they will therefore help the dealer more than any expensive national magazine advertising. Not one user in any locality can escape our broadside. The dealer can have the satisfaction of knowing every prospect in his terri-

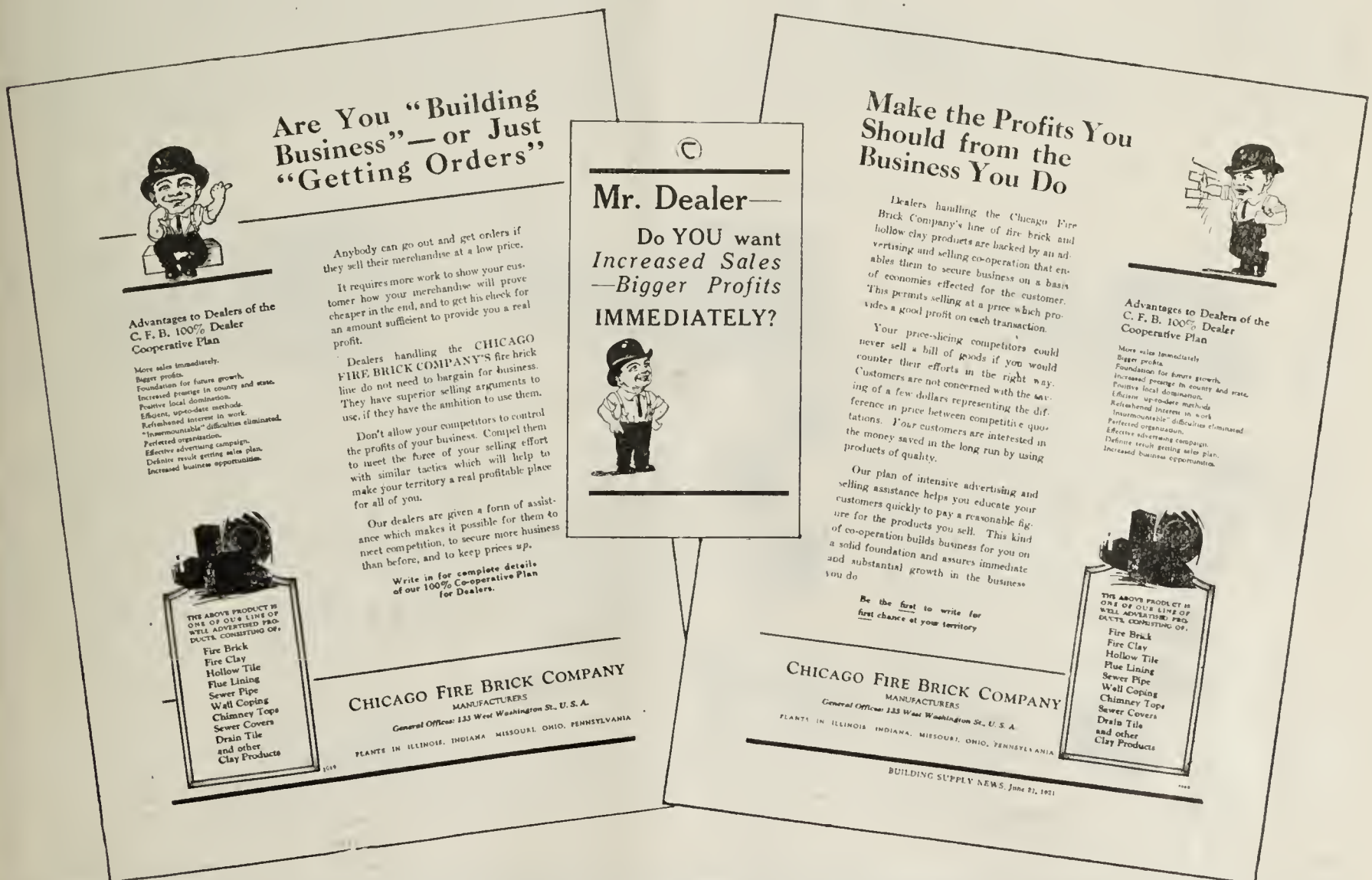


The Covers of Two of the Attractive Leaflets Which Are Intended for Distribution by the Dealer. The Blank Space is Reserved for the Dealer's Name.

tory has heard of our products and why they are quality products and therefore the most economical to use.

ADVERTISE IN DEALER'S NAME

"2. We conduct a special advertising and selling campaign in



Examples of the Chicago Fire Brick Co.'s Advertising to Dealers. Strong, Straightforward, Businesslike Talks, Carrying Conviction and Designed to Make the Dealer Think Hard.

the dealer's name in addition to our general advertising. This special campaign is shaped to meet local conditions and to represent the nature and personality of the dealer's own business. This advertising ties up with our general campaign, advertises the dealer's business, doubles the effectiveness of

discretion, turned over to him, or developed in our sales promotion department and at the right time turned over to the dealer, or developed by mail, the sale made, and credit given to the dealer, or all three methods worked at once in order to make the getting of the business more sure. In other words, we do everything we can to boost the dealer's game and to protect him fully.

ASSIST DEALER IN SELLING

"4. The dealer is given personal sales assistance in swinging business. Our salesmen function both in territories where we have no dealers as our direct representatives, and as salesmen for the dealer in his territory where he seeks our personal help in making difficult sales. A sale made by one of our salesmen for a dealer is as surely a sale for our company as would be a sale made by us direct to the user.

"5. All advertising and sales literature are of the very highest sales quality. All folders, booklets, direct-by-mail pieces, etc., are prepared by engineering and sales talent of the highest order, thus bearing out the policies of quality carried out in manufacturing and selling the products.

"Just as it is necessary for the dealer salesman to show the customer scientific reasons for using our products, so is it necessary that the same lines of argument, proof thru the use of indisputable facts and figures, be used in the advertising matter to make it of most effectiveness. We want each individual piece of advertising to make a sale by itself, if possible, as advertising of this nature is bound to benefit the dealer more than generalities or high-sounding language.

DEALERS CAN CONDUCT SEPARATE CAMPAIGNS

"6. Dealers are kept supplied with a stock of numerous pieces of advertising and sales literature covering our products and their application to services for which they are particularly suitable. Thus the dealer can make up campaigns of his own as he sees fit from time to time and has high grade printed literature over his own name, supplied to him free by us, which he can use to stimulate sales in any one direction at a moment's notice. The use of this stock literature also gives him the opportunity to get advertising value into practically all of his correspondence and to thus utilize every opportunity for spreading his name and a knowledge of the products he carries.

Don't Blame the Brick

It is common practice for users of high grade fire brick to use a clay of questionable quality when laying the brick.

A chain is no stronger than its weakest link. The idea in this old saying was never more true than in its application to the use of fire brick.

You will save money by having clay of even better quality if possible than the brick.

Give us the name of the brand you are using and the purpose for which you are using it and we will give you the kind of clay you should use.

We, ourselves, mine a variety of clays suitable for all purposes, but none suitable for all purposes. If anyone else is telling you that one brand is best for all purposes, there are good people to be had who will give you no obligation advice and we give you the best.

CHICAGO FIRE BRICK COMPANY
MANUFACTURERS
133 W. Washington St.
Minor in Elkhart, Indiana

ELECTRIC FURNACE
The World's Best Fire Clay Brick

For the following services:

- ELECTRIC FURNACES
- BUSHING FURNACES
- PULPING FURNACES
- REFRIGERATING FURNACES
- FORGING FURNACES
- POT FURNACES
- MALLEABLE FURNACES
- ENAMELING FURNACES
- ZINC, TIN AND LEAD SMELTERS
- METAL REDUCTION FURNACES
- COPPER SMELTERS
- GLASS TANK FURNACES
- CEMENT KILNS
- LIME KILNS
- GYPSEUM KETTLES
- SUGAR KILNS
- BOILER LININGS OF ALL KINDS

ELECTRIC FURNACE brick withstand a higher heat than other brands of fire brick. Maximum shrinkage has taken place in manufacture and you will not be bothered with the usual costly re-fluctuating temperatures.

ELECTRIC FURNACE stand up under maximum loads of superimposed brick without changing form. Better than other high heat brick, they withstand the abrasive action of furnace charge etc. If you want only the best and therefore the most economical brick to use, you will specify ELECTRIC FURNACE for your next order.

CHICAGO FIRE BRICK COMPANY
MANUFACTURERS
133 West Washington Street, Chicago, U.S.A.

Type of Leaflets Which Are Distributed by the Chicago Fire Brick Co. and by the Company's Dealers. These Shots Are Aimed at the Consumer and Are Sent Out with Letters Every Week.

either, and without doubt makes his name better known, thru-out his territory.

"3. The dealer gets exclusive sales rights on our line so that he is fully protected, and gets the full benefit of both our advertising and his. All business coming out of the dealer's territory direct to our firm is turned over to him, and all leads which our advertising department secures are, at the dealer's

A HAND-MADE Fire Brick is Vital for Many Reasons

Top-speed mechanical methods are all right for quantity production, but they will not answer the purpose in the manufacture of fire brick which have to meet the most exacting requirements.

ELECTRIC FURNACE are hand-made. The hand work is not discarded, and which is otherwise impossible. The atmosphere, conditions, and which is otherwise impossible. The atmosphere, conditions, and which is otherwise impossible. The atmosphere, conditions, and which is otherwise impossible.

CHICAGO FIRE BRICK COMPANY
MANUFACTURERS
133 W. Washington St.
Minor in Elkhart, Indiana

The Cupola Block that Wears Down Smoothly, Slowly - Evenly

Wellsville Cupola Blocks give better service and last longer in foundry practice than any other cupola block manufactured.

Wellsville Cupola Blocks are made to meet the peculiar requirements in foundry service. They are not fire brick—they are a special formula and manufacture for the rapid condensation met in foundry practice.

To the hundreds of users of Wellsville Cupola Blocks, they are best known for the remarkable manner in which they resist slagging and abrasive action, wearing down smoothly, slowly and evenly throughout the length of the cone in which they are installed.

Wellsville Cupola Blocks are thoroughly abundant in manufacture, and the natural chemical balance of the materials employed endows them with that no-matter-shedding to sharp contraction and expansion tendencies common in cupola service.

To use with Wellsville Cupola Blocks, our Marseilles Star fire clay brings out the best there is in the lining. These two can be purchased at the same time and will provide the maximum in service if used together. Marseilles Star, "The 100% Fire Clay," will improve the service of any brand of cupola block.

CHICAGO FIRE BRICK COMPANY
MANUFACTURERS
General Offices: 133 West Washington St., Chicago, U.S.A.
PLANTS IN ELKHART, INDIANA; HOBOKEN, OHIO; PHILADELPHIA, PA.

Wellsville and **Marseilles Star**
The 100% Fire Clay

Cut Down the Frequency of Fire Brick Replacements

From ten to fifty per cent of all the brick replacements are unnecessary. They cost time, money and labor that could be avoided by the use of brick more suited to the physical requirements in your plant.

And the cost of these replacements is not in the price of the brick. Of far more expense to you is the loss of time of various personnel, the costly and unnecessary hard ship worked on other equipment, the attention of men diverted from regular routine, and the cost of making repairs.

Cut down these replacements by using a brick that squarely meets the two fundamentals for superior service. ELECTRIC FURNACE, "the world's best fire clay brick," meets the requirements for a high grade money saving fire clay refractory better than any other brand of brick manufactured.

Two copies of "Fire Brick Facts—The Facts That Count" will tell you why.

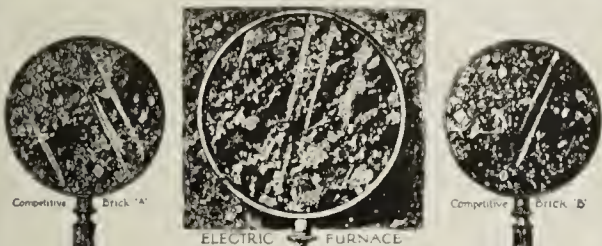
CHICAGO FIRE BRICK COMPANY
MANUFACTURERS
General Offices: 133 West Washington St., Chicago, U.S.A.
PLANTS IN ELKHART, INDIANA; HOBOKEN, OHIO; PHILADELPHIA, PA.

ELECTRIC FURNACE
The World's Best Fire Clay Brick

Some of the Excellent Advertising Copy Used in Trade Papers with National Circulation to Attract the Consumer. This Reverts Directly to the Benefit of the Dealer.



"The World's Best Fire Clay Brick"
for SEVERE and FLUCTUATING HEATS



The glass will tell
put your boiler fire brick to this test

Break such a brick as you are now using for your boilers, magnify a portion of the broken surface, and you will find one of two conditions.

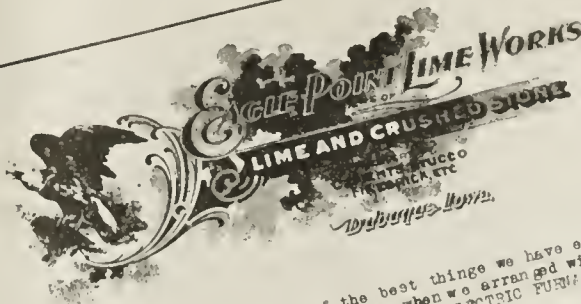
The brick is either composed of many different substances fused together into a hard solid mass, or else it is quite spongy, apparently of the same substance throughout, and the particles comparatively loosely held together. If the former, you should look around for a better brick for your boilers; if the latter, you are probably using

ELECTRIC FURNACE
"The World's Best Fire Clay Brick"

Rest assured only a spongy brick, hand made from pure flint clay will fill the requirements properly of a brick for boiler use. If you want longer life from your brick, more efficient combustion, satisfied workers, in fact, maximum all-around satisfactory service, you will be glad to receive and read our booklet—

"Economy in Boiler Settings"—Your Copy on Request

"The World's Best Fire Clay Brick"
for SEVERE and FLUCTUATING HEATS



Perhaps one of the best things we have ever done for any group of our customers was when we arranged with the Chicago Fire Brick Company to handle their ELECTRIC FURNACE fire brick here in Dubuque.

The ELECTRIC FURNACE brand which they have lately perfected and are now advertising widely, and which they are selling after very exhaustive tests - to the Commonwealth Edison, Detroit Edison, Public Utilities Corporation, and other big power plants, is showing double, three times, even four times the service of the other better known brands heretofore considered the best for boiler work.

You can get some of these brick from the stock we now have on hand, and gentlemen, you owe it to yourselves to learn as soon as possible just what these brick will do for you in comparison with the brick you are now using.

**The
Glass
Will Tell**

ELECTRIC FURNACE
"The World's Best Fire Clay Brick"

Another Folder Which the Chicago Fire Brick Co. Prints and Gives to Its Dealers for Distribution. The Company Has Omitted Its Name Entirely from This Folder. At the Left the Folder Is Shown Open; the Small Picture in the Center is the Front When Folded; the Other Views Are Different Sections.

"7. Special schooling work is carried on with the dealers and their salesmen, by mail and in person, to instruct them in the most up-to-date methods of selling, in the manufacturing methods employed on our products, and in the practical side of selling those products, and they are instructed particularly in the great fundamental difference in going after business on a price basis and in developing permanent customers on a quality and service basis.

A TERRITORY CAREFULLY ANALYZED

"In other words, the one big fundamental idea in our work for the dealer is the selling of merchandise to the customer which will economically be the best for him in the long run and thru him on account of his recognition of the service performed, the best thing for the dealer.

"Finally, each dealer territory is carefully analyzed, the possibilities for selling clay products in his locality studied closely, local conditions and all features of the dealer's business con-

sidered, and a special program and definite line of action for the dealer worked out and applied in the best possible way to get results for all three—the consumer, the dealer, and ourselves. And the three certainly work out together because the biggest benefit is secured to one when it is likewise secured for the others."

✕ ✕ ✕

Tennessee to Get New Rate Schedule

The Interstate Commerce Commission, Washington, D. C., handed down a decision on August 19 relative to interstate rates charged on certain building materials by the carriers in Tennessee. The present rates on common brick and sewer pipe are not found unduly preferential or prejudicial, and are maintained in force. Rates on stone and gravel in carloads for use in public highway construction have been found to result in undue prejudice to shippers in interstate traffic, and a new schedule will be arranged.

Vital Change in Canadian Customs Rulings

Recent revisions of the Customs Tariff Act of Canada regarding all commodities exported into Canada threaten to work hardship on the clay products manufacturer who has in the past found Canada a profitable market. After December 31, 1921, all goods shipped into Canada will have to be stamped, branded or otherwise designated to permanently show what country they came from. Failure to comply with the new ruling will subject the goods to an additional duty of ten per cent. ad valorem and the goods will not be passed until they are properly marked at the expense of the importer.

Under date of August 25 the Canadian Commissioner of Customs advised a Canadian importer of American-made face brick that his interpretation of the law is that building brick and fire brick will be required to be marked in accordance with the provisions of the regulations.

Due to the impracticability of marking many manufactured commodities to conform with the strict interpretation of the customs law many manufacturers of America have pro-

tested. It is very evident that if the law is strictly applied to clay products, shipments into Canada of these materials will practically cease, unless the manufacturer goes to the expense of branding every piece, "Made in U. S. A."

A large delegation of Canadian importers of American products, among whom American interests will be represented will probably call on the proper Canadian official very shortly in an effort to impress him with the consequences of a strict interpretation of the act.

A bulletin sent by the American Face Brick Association to its members urges every company that has ever exported brick or other clay products into Canada to write at once to the Honorable R. R. Farrow, Commissioner of Customs and Excise, Ottawa, Ont., Canada, and explain to him why it is going to be impracticable to comply with the regulations. Secretary Hollowell, of the American Face Brick Association, will probably be a member of a commission composed largely of Canadian importers of face brick, which will endeavor to secure a special interpretation of the act in regard to face brick.



PRICES *in* NEW YORK BUILDING MARKET UNSTABLE—NEW JERSEY FREIGHT RATES LOWERED

P RICE CHANGES in certain building materials in the New Jersey sector of the metropolitan district over the week-end were due to a revision of freight rates for rail shipments to intermediate points, says the Dow Service daily building report of September 10, 1921.

This change will not affect the New York market, however. The rate on cement, for example, including war tax from the Lehigh cement manufacturing district to Jersey City and Hoboken in the past has been 39 cents. The charge for Elizabeth, N. J., for illustration, was 43 cents and for Plainfield, 49 cents. The rate between Jersey City and Hoboken under the new schedule has been advanced from 39 cents to 43 cents, but the rates to Elizabeth have been reduced six cents, Plainfield, Bound Brook and Somerville, ten cents and Paterson and Passaic ten cents and proportionate reductions have been made effective to intermediate stations.

CEMENT IS \$3 PER BARREL

The reason this freight rate change does not apply to New York is that the old rate of 39 cents applies to direct New York shipments, the change applying only to local deliveries in Jersey City or Hoboken. The New York price for cement includes 30 cents for lighterage, 40 cents for bags and \$2.10 for the cement, making the price \$2.80 to the dealer, wholesale, to which, for delivered price the cost of handling, haulage and profit must be added making the price in New York delivered on job between \$3 and \$3.20 a barrel.

There came simultaneously with the rate change an announcement to the effect that roofing material and patent board for shipment from Bound Brook, N. J., had been dropped \$5 per ton for the tarred felt and \$4 a thousand feet for the board.

LUMBER SHOWS PRICE ADVANCES

The lumber market is entering a singular phase. Dealers are facing aggressive competition to meet the price limits set by purchasers, while the wholesale market is not only stiffening, but actual price advances have been recorded. North Carolina yellow pine roofers have advanced \$1 in the wholesale market, yellow pine comb grain flooring has advanced \$2. There are still pale quotations made in the retail market on yel-

low pine while the same commodity in the house building sizes in the wholesale market is actually moving up. In the industrial construction sizes of yellow pine timber there is no actual price advance, but the wholesale price levels are being rather strongly held in the market as a whole.

MAPLE FLOORING PRICE DECLINING

While other flooring materials are strengthening on price in the wholesale market maple flooring is sloughing off. Earlier in the year the manufacturers of this kind of flooring sought apparently to hold the market firm by producing approximately what the market could absorb. This was ascribed to a desire to avoid excess profits taxes and to save the carrying costs of large inventories during the uncertain mid-summer building movement. The price of maple flooring, however, declined with other types of floor material and to meet the situation the mills have reopened under lowered manufacturing costs and are attempting to stimulate demand by seeking to meet the price levels the buying market has set. Maple flooring interests are now trying to unseat the comb grain market via price concession.

Competent analysts in the heavy timber market look for a gradual up-lift in wholesale prices, which, of course, will be reflected ultimately in the retail market, during the remainder of this month, October and November. These are the months that some industrial building development may be expected.

NO STABILITY IN PRICES AS YET

By December the big timber interests would not be surprised to experience a slight price slump during which prices may revert to approximately those ruling in August-September. Buyers are basing their present policies upon the contingency of this price slump lasting thru January and February. The factors now governing the turn of general business conditions for the better, if continued, should start another upward price movement in March, April and May which, judging by present dealer stocks, mill capacity and supply and timber cut, should mark the start of a comparatively permanent price range considerably above those now ruling.

NEW TARIFF INCREASES DUTY on CLAY PRODUCTS

*Fordney Tariff Bill Proposes Duty on Imported Goods
According to American Value—Right of Protest Restored*

THE NEW TARIFF BILL as outlined and developed by the Ways and Means Committee of Congress is a matter of important moment to all engaged in the clayworking industries. The measure, commonly known as the Fordney Tariff Bill, is expected to be one of the first matters considered when Congress reconvenes and upon the tariff proposition, as a whole, hinges, to a large extent, the revival of business activity throughout the nation and future prosperity in international commerce.

The tariff measure was passed by the House of Representatives, with a vote of 289 to 127, late in July, and will make its next appearance in the Senate. While certain revisions likely will be necessary, the bill, as it stands, forms the nucleus of our new tariff laws for some years to come, and a comprehensive knowledge of the basic features will prove of decided advantage to those importing and exporting materials, as well as to others who must look to foreign competition.

AMERICAN VALUATION PLAN

The proposition of assessing duties on imported merchandise on an American valuation is one which has been the subject of considerable discussion, pro and con, since first advanced. At a recent joint conference of the House Ways and Means Committee, this plan of assessment was accepted, and will be recommended to the Senate as a part of the permanent tariff bill. Certain modifications and limitations have been proposed.

In substance, the sections of the bill devoted to this feature provide that duties ad valorem shall be taken on values found by appraising officers to be the values in the United States. Under the system, every kind of imported merchandise will be appraised at its value in this country. It is proposed to get away from foreign sources of value as statutory requirements, but to retain such values, prices and costs as means of assistance in determining value in the United States.

WHOLESALE SELLING PRICE TO DETERMINE VALUE

Under the new bill, it is provided that the dutiable value will be the wholesale selling price in the open markets of the United States of comparable and competitive domestic products, where such are available. In cases where there are no such products, officers are to ascertain the value, whether or not there shall be an actual sale, for consumption or use in this country.

William Burgess, now a member of the Tariff Commission, and formerly an officer in the United States Potters' Association, is an ardent advocate of the American plan of valuation for imported ceramic products. Mr. Burgess, himself a well known potter, expressed his views quite forcibly in this connection in a paper presented at the June meeting of the New Jersey Clay Workers' Association and Eastern Section of the American Ceramic Society, referred to in *Brick and Clay Record*, issue of June 28.

RIGHT OF PROTEST

Allowing for the prevailing right of review by the Court of Custom Appeals of questions of law affecting the validity of reappraisement, the Fordney tariff bill also restores the right of protest against the rate or amount of duty as being too low (which was in the law prior to 1913), extending to American

manufacturers and producers an opportunity to be heard upon matters of value and classification of imports.

In the extended privileges, it must be shown that it is impracticable to import goods in the name of the manufacturer or an agent, and no manufacturer or producer would be permitted to inspect the papers of the importer to acquire information. The time for filing protests is increased from 30 to 60 days.

The average rate of duty in the new tariff bill will range between 18 and 20 per cent., according to unofficial estimates, as compared with 18.55 in the Payne-Aldrich bill. The average rate in the Underwood tariff bill, now current, is six per cent.; in the Dingley bill, the average was 26½ per cent.

The new tariff bill enumerates ceramic products under a classification of "Schedule C," listed as "Earths, Earthenware and Glassware." The important features are as follows:

RATES FOR BRICK

Fire brick, weighing not more than ten pounds each, not glazed, enameled, ornamented, or decorated in any manner; and brick other than fire brick, ten per cent. ad valorem. Weighing more than ten pounds each, 17 per cent. ad valorem.

Brick, glazed, enameled, ornamented, or decorated, 20 per cent. ad valorem.

Magnesite brick, three-fourths of one cent per pound, and ten per cent. ad valorem.

Chrome brick, not glazed, enameled, painted, vitrified, ornamented or decorated in any manner, 23 per cent. ad valorem.

Bath brick, 23 per cent. ad valorem.

(Under the present Underwood bill, the tariff on fire brick varies from 10 to 15 per cent., while in the new Fordney measure the range is from 10 to 23 per cent., as will be noted.)

RATES FOR TILE

Tiles, unglazed, glazed, ornamented, hand-painted, enameled, vitrified, semi-vitrified, decorated, encaustic, ceramic, mosaic, flint, spar, embossed, gold-decorated, grooved and corrugated, and all other earthenware tiles and tiling, regardless of name (except pill tiles and so-called quarries or quarry tiles), but including tiles wholly or in part of cement, valued at not more than 40 cents per square foot, carry a duty of eight cents per square foot, but not less than 35 per cent. nor more than 50 per cent. ad valorem. Such tilings valued at more than 40 cents per square foot, 38 per cent. ad valorem.

Mantels, friezes, and articles of every description, or parts thereof, composed wholly or primarily of earthenware, tiles or tiling (except pill tiles), 38 per cent. ad valorem.

So-called quarries, or quarry tiles, red or brown in color, seven-eighths of one inch or over in thickness, three cents per square foot, but not less than 20 per cent. ad valorem.

RATES FOR UNWROUGHT CLAYS

(Under the present Underwood bill, the tariff on tiles is 1½ cents per square foot to 30 per cent. ad valorem, while in the new Fordney measure the range is from 35 to 50 per cent. as will be noted.)

Clays or earths, unwrought or unmanufactured, including

common blue clay and S. gross-Almerode glass potclay not specially provided for, \$1 per ton. Wrought or manufactured, not specially provided for, \$2 per ton.

China clay or kaolin, \$2.50 per ton.

Bauxite, crude, not refined or otherwise advanced in condition in any manner, \$1 per ton.

Fuller's earth, unwrought and unmanufactured, \$1.50 per ton. Wrought or manufactured, \$3 per ton.

Fluorspar, \$5 per ton. It is provided that after the expiration of one year, following the adoption of this law, the duty on fluorspar shall be \$4 per ton.

Common yellow, brown or gray earthenware made of natural, unwashed and unmixed clay, plain or embossed; common salt-glazed stoneware; stoneware and earthenware crucibles, 20 per cent. ad valorem.

RATES FOR EARTHENWARE CROCKERY

Earthenware and crockery ware composed of a non-vitrified absorbent body, including white granite and semi-porcelain earthenware; cream-colored ware and stoneware, including ornaments, toys, vases, cups, etc.; and all other articles composed wholly or primarily of such ware—if plain white or of plain other color, not decorated in any manner, 25 per cent. ad valorem. If painted, colored, ornamented or decorated in any manner, 28 per cent. ad valorem.

RATES FOR CHINA PORCELAIN

China, porcelain and other vitrified wares, including chemical porcelain ware and chemical stoneware, composed of a vitrified non-absorbent body which, when broken, shows a vitrified or vitreous, or semi-vitrified or semi-vitreous fracture, and all bisque and parian wares, and all other articles composed wholly or primarily of such ware—if plain white or plain brown, not painted, or ornamented, 35 per cent. ad valorem. If painted, colored, ornamented or decorated in any manner, 40 per cent. ad valorem.

* * *

Examining Constituents in Kaolins

A microscopic examination of the mineral constituents of kaolins is being conducted at the Ceramic Experiment Station at Columbus, Ohio.

* * *

Making Tests on Concrete Brick

Are concrete brick superior to clay brick? According to a statement, tests now being conducted at the Department of Civil Engineering, Columbia University by Prof. Albin H. Beyer, indicate that the cement product is superior to clay. The tests are quite elaborate and the concrete brick manufacturers are hoping to prove conclusively that their product is capable of withstanding more severe strength tests than clay brick.

"The tests completed to date," Professor Beyer states, "indicate that the ratio of the average strength of brick masonry to the strength of the individual brick composing this masonry varies widely with the kind of material of which the brick is made.

"This strength or efficiency ratio seems to greatly favor the cement and concrete brick, which with the mortar forms a more homogeneous monolith than the various kinds of clay brick now used.

"Under the existing building codes, to our knowledge, cement and concrete brick are only accepted as building materials under the specifications and standard physical tests for clay building brick. It is now being realized that, due to the wide variation in the physical properties, strengths and behavior of these different kinds of brick mentioned, the standard specifications for clay brick cannot in fairness be applied to the cement and various kinds of concrete brick developed to date.

"It should prove of great value to engineers, architects and builders. At present the cement and concrete brick industry is handicapped to a material extent by the lack of provisions in the building codes for this new material, but before the necessary provisions in the codes can be made, reliable and conclusive test data must be available. The tests now being made will furnish necessary data."

The committee on testing consists of Professor E. B. Lovell, Professor A. H. Beyer and Professor J. K. Finch. W. J. Krefeld is engineer of tests.

* * *

1922 Home Exposition Promises Big Things

The second annual "Own Your Home" exposition in Chicago will be held in the Coliseum, March 25 to April 1, 1922, inclusive. The official announcement is made by Mr. Fred C. Balthaser, assistant manager, with the further information that advance reservations of exhibition space justify the prediction that the 1922 exposition will surpass in all particulars, and especially in the number of exhibits, the first annual show of last spring.

Mr. Robert H. Sexton, managing director of the Chicago Exposition, basing his statement on recent personal investigation in a half dozen mid-west cities, says that 1922 is very apt to prove a record breaking year in the building of one and two-family dwellings. Mr. Sexton's belief is based on the evidence of approximate stabilization in the material and labor market, improvement in financial conditions and the evidence that no appreciable headway has as yet been made in eliminating the housing deficit which has accumulated during the last four or five years.

In Chicago the advance reservations made by plumbing and heating indicate that the exhibits of these appliances will be the most complete ever brought together in a similar exposition. The banks and real estate men are showing a keener interest in the 1922 event than was evinced in this year's exposition and several unique and valuable educational campaigns on acquiring and equipping a home will be prosecuted during show week.

Chicago's first exposition of this character attracted approximately 100,000 visitors and, for a first show, the volume of business actually transacted by exhibitors was exceptionally large.

* * *

Predict Advance of Common Brick Price

There is every indication that building material prices in New York and the New York district will show an increase over present levels in the near future. The Dow Service daily building report for September 3 says the following:

"In common brick the wholesale market at New York was wholly sold out Friday as far as Hudson brick were concerned. No definite official count has been made of the supply of Hudson common brick that will be available for this market. In normal times, however, a total production of 1,200,000,000 brick was recorded by 119 plants. About 40 of this total have been idle since the war. Those that have been operating have not been able to turn out more than 30 per cent. of capacity. The winter reserve this year will be less than the normal minimum and if present consumption rates are continued and cold weather comes early this autumn, or coal is hard to get, a maximum estimate of 300,000,000 brick for New York's requirements will prove liberal. At 300,000,000 New York will have ample supply for a moderate building construction program, rating, say, at 35 per cent. of a 1914 normal. If the present rate of consumption is maintained, however, or considerably more activity in building should develop between now and next May, as now seems more possible, prices of common brick cannot be maintained at present levels. A normal winter reserve is computed to be 400,000,000 brick."

ONTARIO CLAY MEN START ADVERTISING CAMPAIGN

Manufacturers Form "Associated Clay Workers of Ontario" to Push "Guaranteed Claycraft"—Work for Lower Freight Rates — Assisting Farmer with Drain Tile Problems

WHEN BUSINESS stops coming in of its own accord it is time to start going after it and bringing it in forcibly. This is what several Ontario, Can., clay manufacturers thought and acting on the thought, formed an organization known as the Associated Clay Workers of Ontario. This association has for its primary object the promotion of the selling of clay products thru advertising and other methods. Since no advertising or selling efforts of any consequence had ever been made it was evident that there was a great potential market which had never been touched and which probably needed nothing but stimulation in the form of well directed advertising to make itself felt on the books of the Ontario manufacturers. Drain tile especially needed to be pushed as a great amount of this material was necessary to make the lands as productive as they should be.

Many farmers in Ontario are anxious to tile their lands but ignorance of how to tile, what kind of tile to use and where to purchase has been serious handicaps to the development of drainage. In some cases also farmers have been discouraged thru the failure of tile of inferior quality to function properly and stand up under all soil conditions.

Here, then, is a big field to be developed, a big market to be stirred into action.

ONTARIO MANUFACTURERS FORM ASSOCIATION

Realizing all this several Ontario manufacturers got together, formed the Associated Clay Workers of Ontario, and decided to push products which were reliable, in which the purchaser could put confidence, at the same time showing him where and from whom to buy. The manufacturers interested in the campaign are Aaron Hill, Essex; Hallatt & Son, Comber; Alfred Wehlann, Cairo; Wm. Hallatt, Merlin; Erie Clay Products, Ltd., Port Dover; Armstrong Bros., Fletcher; London Clay Products, Ltd., London; Tilbury Brick and Tile Co., Ltd., Tilbury; H. C. Baird Son & Co., Ltd., Parkhill.

Quality is the keynote of the campaign and to this end a trade mark has been established by which it is planned to insure manufacturer and purchaser alike. The name "Guaranteed Claycraft" has been adopted as the symbol of quality which will serve as a guide for the purchaser. Any tile to be sold under this trade mark must first pass the tests on freezing and thawing and crushing.

The Oldest Product Known

HISTORY shows that clay was the first material used by man. Specimens of brick and pottery made by prehistoric man about 7,000 B.C., have come through the ages, remaining firm and solid to present time.

CLAY PRODUCTS

of to-day are just as indestructible—but they are not made in the old primitive manner. Machinery and scientific methods have revolutionized the industry.

Following the example of clay industries in other countries, Canadian manufacturers of clay products have now formed an association, the object of which is a better product, and a better service to the consumer.

Guaranteed "CLAY-CRAFT" Products Include

Land Tile
Wall Tile
Brick

This service will include: a saving on freight rates on distant shipments; advice to farmers and builders on the use of the product; information concerning combination shipments, etc.

Every member of the association manufactures the "CLAY-CRAFT" line which must come up to a high standard to fulfil the requirements of rigid government tests.

For full information write
M. M. Dillon, Port Dover, Ont.



Land Tile. Wall Tile. Brick.

Manufactured By

Tilbury Brick & Tile Co., Ltd.,	Tilbury, Ont.
London Clay Products, Ltd.,	London, Ont.
Armstrong Bros.,	Fletcher, Ont.
Erie Clay Products, Ltd.,	Port Dover, Ont.
Wm. Hallatt,	Merlin, Ont.
Alfred Wehlann,	Cairo, Ont.
Hallatt & Son,	Comber, Ont.
Aaron Hill,	Essex, Ont.
H. C. Baird, Son & Co., Ltd.,	Parkhill, Ont.

Frost Proof and Permanent

FROST is one of the great destructive elements that play havoc with inferior drain tile after it is laid. Moisture is prevalent in any drain and the alternating freezing and thawing during the winter frequently causes complete destruction to tile not manufactured by the proper process.

Guaranteed "CLAY-CRAFT" Stands the Test

Government experts apply the following freezing and thawing test: Tile are immersed in boiling water for some hours, then removed and placed in an ice machine and frozen. This operation is repeated several times. Samples of Guaranteed "CLAY-CRAFT" Tile submitted by the members of the Association of Tile Manufacturers, have successfully withstood the freezing test, which is more severe than any met with under natural conditions. The Tile are also subjected to a crushing test of 800 lbs. Guaranteed "CLAY-CRAFT" proved capable of sustaining this weight.

For full information write
M. M. Dillon, Port Dover, Ont.

Guaranteed "CLAY-CRAFT" Products Include

LAND TILE
WALL TILE
BRICK

These high-grade materials are all subjected to rigid government tests and are backed with the Association's guarantee.



Land Tile. Wall Tile. Brick.

Manufactured by

Wm. Hallatt,	Merlin, Ont.
Armstrong Bros.,	Fletcher, Ont.
H. C. Baird, Son & Co., Ltd.,	Parkhill, Ont.
Erie Clay Products, Ltd.,	Port Dover, Ont.
Tilbury Brick & Tile Co., Ltd.,	Tilbury, Ont.
London Clay Products, Ltd.,	London, Ont.
Aaron Hill,	Essex, Ont.
Alfred Wehlann,	Comber, Ont.
Hallatt & Son,	

Farm Improvement With Government Assistance

IT is the desire of the Ontario Government that all farms of the province be placed on a better producing basis. This can be accomplished by tile drainage, and with this object in view the government through the Dept. of Physics of the Ontario Agricultural College at Guelph is making the following offer to all farmers:

An Expert Drainage Advisor Will Be Sent

to any farmer who applies to the O. A. C. There is no charge for this service. The salary of this expert is paid by the department, but his expenses to and from the farm, and accommodation while on the job, is arranged by parties for whom survey is made.

Drainage plans are further assisted by Township Councils and Banks. The farmer who takes advantage of this service will, of course, not overlook the moderate price and quality of Guaranteed "CLAY-CRAFT" Tile.

Write for full information regarding it to
M. M. Dillon, Port Dover, Ont.

Guaranteed "CLAY-CRAFT" Products Include

LAND TILE
WALL TILE
BRICK



Land Tile. Wall Tile. Brick.

Manufactured By

Hill,	Essex, Ont.
Son,	Comber, Ont.
Wehlann,	Cairo, Ont.
Hallatt,	Merlin, Ont.
Erie Clay Products, Ltd.,	Port Dover, Ont.
Armstrong Bros.,	Fletcher, Ont.
London Clay Products, Ltd.,	London, Ont.
Tilbury Brick & Tile Co., Ltd.,	Tilbury, Ont.
H. C. Baird Son & Co. Ltd.	Parkhill, Ont.

ONTARIO BIG FIELD FOR DRAIN TILE

There is a great amount of drainage to be done in Ontario but the demand has been of a rather fitful nature at times being very small and during certain other seasons greater than the supply. The advertising campaign endeavors to remedy this condition by advising the farmers to place their orders early giving manufacturers an opportunity to anticipate the demand.

One of the big things which is promoting the use of drain tile in Ontario is the fact that farmers can now secure the advice of experts regarding the best methods of drainage. The Ontario Agricultural College at Guelph, Ont., will send an expert drainage advisor to any farmer who applies to the college. There is no charge for this service excepting that the farmer is obliged to pay the expenses of travel and provide accommodation while the expert is on the farm. These men are filling a long felt need in that section and will undoubtedly do much to stimulate the sale of drain tile.

TRYING TO SECURE LOWER FREIGHT RATES

Freight rates in Ontario, as everywhere else, are hampering the free movement of clay products and except on short hauls, are making the price of drain tile, brick and hollow tile almost excessive. The Associated Clay Workers of Ontario are making a concerted effort to secure equalization of freight rates so that it will be possible for them to take care of a large area. It is hoped to divide freight rates in such a way that the man living a hundred miles away will not have to pay three times as much as the man living twenty miles from a clay plant.

Nearly all of the manufacturers who are members of the Associated Clay Workers of Ontario also manufacture brick and hollow tile and have found it difficult to market their products at any distance from the plant. It is always hard for builders outside of a large center to obtain supplies of these materials without paying a very high freight rate. In a great many cases the builders did not know that brick and hollow tile were being manufactured within a very few miles of them.

Altho the advertising campaign has been on only a short time, a large number of inquiries have been received, many of which have developed into orders.

WANT ALL ONTARIO CLAY COMPANIES TO JOIN

The guiding spirit and director of this campaign is M. Murray Dillon, of the Erie Clay Products Co., Port Dover, Ont., and secretary of the association. Mr. Dillon is a progressive man and a firm believer in modern marketing methods. He received the bulk of his experience as an engineer and contractor and was also the builder of the Tilbury (Ont.) Brick & Tile Co. Shortly after building this plant Mr. Dillon, with two associates, took over the plant in Port Dover, reconstructed it along modern lines using up-to-date labor-saving devices and changing it from a seasonal plant to one which can be operated all the year round.

It is the intention of the manufacturers who are now members to get all the Ontario plants to join the organization. A drive will probably be made this winter with this object in view.

One of the things the Associated Clay Workers of Ontario is doing is establishing a standard of quality which all members must adhere to. It is necessary for every member joining the association to have his tile pass the tests of the Ontario Agricultural College, and he must also agree to stand back of his shipments and maintain the quality of his ware up to standard.

Inasmuch as clay products have never been advertised in Ontario this movement should prove very profitable for those taking part in it.

Experimenting With Six-Wheeled Truck

In order to increase the use of auto trucks and enable them to use pneumatic tires to better advantage with heavy loads, the Goodyear Tire and Rubber Co. of Akron, Ohio, has been experimenting with a six-wheeled truck. In place of the two rear wheels of the ordinary type, there are four wheels, two on each side, all of which are used as drivers. The body is supported by a heavy leaf spring on each side of the rear, and the ends of these springs bear on the axles of the wheels. Instead of using two 48x12 tires weighing 860 pounds on the rear wheels, the new truck uses four 40x8 tires weighing 480 pounds. Naturally the tire expense both for first cost and for operating will be cut very materially.

With the railroad freight rates which are in effect today, and the increasing use of motor trucks for delivering ware from the plant to the consumer, the possibilities of the six wheeled truck for clay products manufacturers offers a chance for better service at reduced expense and therefore opens up very large possibilities.

It has been recognized that pneumatic tires are by far the best tire equipment for a truck but when large loads have been used as has generally been the case with clay products, it has been found that pneumatic tires were expensive. Further experiments along this line will be watched with much interest, as they may help to solve some of the distribution and delivery troubles of clay products manufacturers.

* * *

Clay Products Opportunities in Algeria

An article which appeared recently in the French magazine "The Illustrated Mediterranean," points out that Algeria imports annually from France and other foreign countries, 400,000 tons of various clay products valued at over 6,000,000 francs, according to the statistics for the last normal year published by the General Government of Algeria.

This country is very rich in clay deposits that are suitable for the manufacture of any kind of ware, including roofing tile, brick, finest china, earthenware, stoneware of all kinds, fire clay products and pottery for cooking. There are a multitude of clay deposits of calcareous nature and of marls oxidized by iron, manganese and other minerals. A large content of mica makes the clay suitable for the manufacture of roofing tile and drain tile, since they are made practically impervious without the use of glaze or enamel.

Among the deposits are argillaceous clays and non-calcareous clays principally of a refractory nature, clays suitable for white slips, yellow and red ochres, quartzite sand, mica, kieselguhr, lead ore, and if necessary a substitute can be found for the tin oxide for earthenware glaze.

The country, furthermore, possesses incomparable china clay which is whiter than snow and is of such extraordinary plasticity that M. Bourgeois, manager of the National Manufacturer of China Wares at Paris, estimates its value at three times that of one of the best china clays from the Limousin.

At the present time, there are a few important plants in and near the great centers of Alger, Oran, Constantine and Mostaganeau. The main product of these plants is roofing tile, and one makes glazed ceramic products. The output is small compared to the quantity that is imported every year to satisfy the needs of the market.

A large manufacturer of clay products in Algeria would not only make good profits, but would also reduce the price for the consumer. In the Constantine district there is a harbor, which has an exceptional location not only on account of the choice raw materials found in the adjoining regions, but also on account of the ability to export the products after profitable manufacture.

Production of High Grade Refractory Ores

The 1920 figures for the production of the minerals used in making basic or neutral refractories in the U. S. are interesting. The production of magnesite increased 94 per cent. from 156,726 tons to 303,767 tons, and the value increased 120 per cent. from \$1,248,415 to \$2,748,150 from 1919 to 1920.

It is interesting to see the effect on this industry due to the world war. The domestic production for 1920 was almost 32 times, and the value in 1920 almost 35 times as much as in 1913. Of course this was due to the curtailment of imports from Austria, Greece and other countries. The production in 1920 was not as large as in 1917, but it is interesting to see that it is larger than either 1918 or 1919, indicating that the industry here must be on a firm foundation and that the cessation of the war has not enabled the foreign material to be imported to as large an extent as formerly.

The domestic production of Bauxite, from which Bauxite

Brick are made, increased almost 28 per cent. in tonnage and 32.2 per cent. in value from 1919 to 1920. Even at that however, the 1920 production was not up to that of 1918. In 1918 the domestic production was greater than the consumption, and we exported 16,058 tons more than we imported. In 1920 however our production was smaller than our consumption and our imports were 20,638 tons larger than our exports. Last year was the first since 1913 that our imports of bauxite were larger than our exports. If the export figures for 1913 had been classified the same as they are now, we might find that even in 1913 our imports were smaller than our exports.

The domestic production of chromite which is the ore from which Chrome Brick are made, however, has dwindled considerably. In 1918 the U. S. produced 24.4 per cent. of the world's production, and 45.1 per cent. of the amount used in this country. In 1920 we produced only 1.3 per cent. of the world's production and only 1.6 per cent of the amount used in this country.



BRICKLAYERS JOIN MANUFACTURERS *in* ADVERTISING CLAY PRODUCTS

ONE of the most encouraging developments in recent years in the clay industry is the inclination the bricklayers are now showing to cooperate with the manufacturers in the promotion of clay products. The antipathy of bricklayers to hollow tile has been somewhat of a stumbling block to the ready sale of this product. The cost of laying hollow tile was greatly increased because the mason did not put forth his best efforts in laying them. He thought that the big units were cheating him out of legitimate work because he could lay them so much faster than the little brick.

Apparently the bricklayers are of a somewhat different opinion now as can be seen in their friendly attitude toward the Ideal or brick hollow wall. Tho this method of construction represents the first departure from those in use for the last six thousand years, the bricklayers were not slow to see the real possibility in the Ideal wall when the situation was explained to them. When the new idea first came into being the bricklayers, in accordance with their traditions did not look with favor upon it. The Common Brick Manufacturers' Association, however, when promoting this wall did not overlook the angle of the mason. Leaders in the union were shown that in spite of the fact that but one-third the brick are required for each house, the new idea would mean more work for them because more buildings would be built of brick on account of the lowered cost.

BRICKLAYERS ENTHUSIASTIC OVER NEW IDEA

So enthusiastic did they become over the new idea that they decided to advertise it at their own expense, having faith that when the Ideal wall was once known an increased use of brick would result. One of the reasons for this enthusiasm was that bricklayers felt they must do something to regain the confidence of the public as during the war this craft, with the other building trades was accused, more or less justly, of soldiering on the job.

"This feeling, combined with the acknowledged high cost of building materials," Ralph P. Stoddard, secretary of the Common Brick Manufacturers' Association, said in a recent issue of 'Printers Ink', "practically stopped all building a few months ago, as everybody knows. We reduced our prices on brick, as did similar associations on their products. Then we found a way to cut still more from the cost by the introduction of a revolutionary principle of bricklaying—the hollow wall idea. It requires fewer brick, less mortar and less labor,

and thus cuts several hundred dollars from the cost of making any sort of ordinary building.

REQUIRES COURAGE TO ADVERTISE HOLLOW WALL

"We advertised it widely, even tho it meant fewer brick on the individual job. We knew it would stimulate building. After a little while the bricklayers saw the idea as we did and now they are back of it with energy and faith. It must be admitted that some courage is required to give widespread publicity to a thing that at first sight would seem to work against the quantity sales of material. But there is a big, broad business principle involved which soon became apparent to the members of our association and also to the bricklayers.

"We proposed to various local bricklayers' unions that they advertise the idea over the union name, thus giving it their indorsement and lining themselves up in a constructive way with a building principle that was bound to work out to their best interests. We offered to prepare the advertising and supply the necessary mats or electrotypes. Then the unions were to pay for the newspaper space used. The offer was accepted eagerly."

This has apparently broken down the bricklayers' coolness toward any but ordinary brick construction. Plans have now been formulated to apply the same methods to face brick and hollow building tile. Local advertising campaigns will be conducted by the unions in cooperation with and backed by the Common Brick Manufacturers' Association, the American Face Brick Association and the Hollow Building Tile Association.

BRICKLAYERS' ADVERTISING IMPARTIAL

The bricklayers will make no attempt to favor any particular type of masonry construction but will endeavor to convince the public of the advantages of masonry construction in general. Attention will be called to the literature of the associations mentioned, urging the prospective builder to send for them but leaving it entirely to him what type of material to use.

This is undoubtedly a big step forward toward solving the numerous labor difficulties and many petty disputes now encountered in the building industry. It can not help but result in a better feeling of the bricklayer toward the manufacturer and toward the work which he is doing. This in turn will mean that the bricklayer will produce maximum capacity on the job.

SEATTLE—a PROSPEROUS CLAY CENTER

Some of the Most Experienced and Best Posted Men in the Country Located There—Has Good Raw Material and Many Natural Advantages

By E. J. Hutmaker

IT WAS AWAY BACK in 1851 when the first settlers arrived at what is now known as Alki Point, to establish for themselves homes and to enter upon divers and sundry pursuits in order to gain a livelihood and perhaps accumulate lands and riches for exploitation. They saw in a limited and mediocre way the value of the great virgin forests as they stretched away for miles upon miles covering mountain sides, hills and valleys with the richest growth of fir, cedar and many varieties of other woods such as can be found nowhere else in the world west of that formidable mountain range which separates the state and causes one part of it to be amply supplied with moisture, while the other is woefully lacking.

VALUABLE CLAY DEPOSITS IN SEATTLE.

The stretches of forest covered miles upon miles of mineral as well as very valuable deposits of clay which could be used in the manufacture of the common wares as well as the more difficult and artful ceramics. Clays which in their plasticity lend themselves to the forming of any design, bringing out in firing their charming array of colors which are admired by connoisseurs from all parts of the world wherever and whenever seen.

Alki Point, as laid out by the first settlers, stood first class chance of becoming a point of much advantage, but probably on account of its projecting spit of land made landing of water craft a hazardous undertaking and soon a new settlement sprang up only a few miles farther to the east and across what is now known as Elliott Bay.

* HAS NATURAL ADVANTAGES

The natural environs and strategic advantages such as deep harbor, quiet waters, good drainage and a vast hinterland soon made itself manifest and the little village in its growing soon passed that of the earlier settlement and when it assumed the name of Seattle, so named after one of the most fearless Indian chieftains of the northwest country, it also took to itself the spirit of adventurous progress, stretching out its welcoming hands to the east, to the north and far away to the south, beckoning to the hunters of fur, the woodsman of the forest, the fisherman of both sea and lake and the travelers crossing the boundless plains in search of new homes or what new lands might have to offer.

CLAY INDUSTRY GREW WITH SEATTLE

It was directly in the wake of the establishment of the first store or trading posts and the operation of the first sawmill that the necessity of brick became apparent and it was not long before Seattle had a brick plant in operation and as the city grew, another, and still another, and

many more were added which up to the present day has kept well apace of the wonderful growth of a wonderful city.

Seattle is more than blessed with a formation of blue clay generously distributed thruout the whole Puget Sound country, the overburden of yellow clay and fine gravel sand being hardly any serious obstacle to its removal. There are several large plants in operation having a daily output of 12,000 to 50,000 each, all using the stiff mud process and continuous kilns. Hollow brick, building block, drain tile and the ever-present common brick are the principal products.

DEMAND FOR HIGH QUALITY BRICK

Fancy front and fireplace brick come to Seattle from long distances such as Los Angeles, St. Louis, Columbus, and Kittanning, Pa., and this same imported ware could be easily duplicated in Seattle if proper care and attention were given to the making. This is forcefully demonstrated by the use of fancy burlap face brick made by the Denny Renton Clay & Coal Company from a mixture of clay brought to Renton from California. The product is used as facing brick for the magnificent ten-story telephone building now being erected and which is one of the finest displays of the face brick maker's art to be found west of Chicago. It does not seem possible that so many plants can see nothing but quantity in the manufacture of brick, forgetting the fact that in brick, as in everything else, quality brings the price. The slogan "Speed Gets 'Em," "We Hurry," "Quick as a Wink" and many others, look and sound like a travesty when one considers how essential and necessary is quality, in any manufactured article, especially building material. As long as some plants blow about their large outputs, just so long will the quality plant continue to thrive and rightfully so.

BUILDING INDUSTRY IN SLUMP

The building industry in Seattle is about as hard hit and probably more so than in any other city of the West. This city has enjoyed wonderful prosperity during the war, some lines of trade, both merchandising and manufacturing, however, do not seem to know that the war is over and that the boys have returned from the battlefields and now want work at a living wage. They continue to hold up the price in certain lines, taking advantage of the reduction in labor, but forgetting to pass this reduction on to the consumer and until this is very generally done we have small hopes for any enlargement of the present perspective.

The Seattle brick industry has among its number, one of the most valuable adherents of quality, a type of the old school, of the hand yard, and outdoor drying, and a visit to his modernized plant is an inspiration as well as a reve-

lation of the rule that what is worth doing is worth doing well.

GIVES GREATER PART OF 80 YEARS TO INDUSTRY.

Mr. Niedergesaess, who has given to the brick industry of our country a most valuable brick die and many other brickyard helps, is a most lovable gentleman of eighty years, most of which were spent in the clay industry, and he looks and acts today much like a man of forty and we hope is destined to be with us for many years yet. It is certainly refreshing to come in contact with such brickyard veterans as the above named gentleman, and a few others who are fast passing away. The story of their lives and doings are well worth while and should serve as beacon lights for the guidance of the younger set, who may have revolutionized but never pioneered.

We have also with us one of our industry's prominent figures in the person of Sam Geisjbeck, a proverbial brick plant doctor, who has cured the ills of many a plant and set them going in the right direction. We also have that veteran burnt clay artist, Charles Engelbrecht, formerly of the Twin Cities, who has taken up an old run down, back-broken plant, resurrected, rejuvenated and renovated it until the same is now making very high quality ware, enjoying a capacity business with good financial results.

GOLD MINER TURNS CLAY DIGGER

We also have a Klondyke King in the person of Thomas Lippy, who operates one of the largest as well as best plants at Harpers, on an island a few miles distant from Seattle. Mr. Lippy dug yellow nuggets from Bonanza and Eldorado creeks in the Klondyke, with a backing of bacon and beans; he is now furnishing red nuggets from Harper Hill with a backing of sirloin and French fried and when one sees his magnificent structure, the white ceramic Lippy block situated on one of the most prominent corners of Seattle, one cannot help but conclude that both creek and hill, bacon, beans, sirloin and French fried guided by a skillful hand and master mind have given to our city an impressive example of great riches won, prudently spent.

The Builders Brick Co., or probably better known as the Hoolihan plant, has the most wonderful clay bank in our country, the face of which is more than 200 feet high and the diggers' at the top look like pigmies. They have a large and well-equipped plant and turn out about 50,000 daily and find a ready market.

SEATTLE ALSO HAS FLOWER POT PLANT

The Abrahamson and Lohse yards are located in West Seattle, Burien district, and also have fine blue clay banks.

In this same district is located Seattle's only pottery, making a very high grade of flower pots. J. O. Hankins came here from Macomb, Ill., that home of the pug ball, a few years ago, and he surely knows how to make flower pots.

Seattle, like many other prominent clay centers is very much lacking in associative harmony and it looks as if it would not be possible to standardize on size, price, method or anything else. Get together meetings, good fellowship gatherings, a long row of well laden tables with plates on each side is what our industry needs not alone here but in many spots in the different parts of our country. United we stand, divided we fall, is as full of meaning today, as it ever was.

FAST GROWING TO POSITION OF IMPORTANCE

Seattle is now passing thru a period of instructive as well as constructive alteration and when matters are finally adjusted and when the malicious, untruthful stories are prop-

erly dissected, our town will be found to have outlived them all. Phoenix-like she is rising from a war-time ship-building wreck, the profiteers of which have long ago been forced out, and is now mounting the high road of a world commerce, enjoying natural location and economical distribution, to all countries of the world.

Seattle, the Queen City of the Pacific Coast, "the never vanquished and never will," invites you to participate in the great prosperity just ahead by bringing with you a factory, a mill or a mine.

When the first settlers took up their homes here, they called the place "New New York." When Chief Seattle came along he saw the inscription and immediately added the word "Alki" which is Indian for bye and bye. Now "we are happy on the way."



Follow Canadian Customs Rulings

The practice of using rubber stamps for fac-simile signatures in place of actually signing customs declarations on the backs of invoices of goods exported to Canada should be discontinued. Canadian customs authorities refuse to accept any but genuine signatures on invoices. The best practice to follow and one which will facilitate shipments of American goods, is to make the declaration in triplicate. This will obviate the possibility of being held up on account of insufficient documentary evidence concerning pottery shipments entering Canada.



Using Bats and Salmons for Garage Floors

A brick manufacturer of Louisville, Ky., in discussing changing conditions recently remarked: "We are going to have to create a new demand for bats, burned brick, and stuff that cannot be sold as brick. A few years ago there was a steady demand for such material for erection of the old style vault or pit, dry wells, etc., but septic tanks, more modern sewerage, etc., have done away with most of the demand for the old style vault, and in some instances the brick manufacturer finds times when he has a surplus of salmon brick, bats, and so forth.

"I believe that with a little advertising a demand could be created for bats for flooring private garage buildings, where the owner wants a serviceable, hard floor. It is a well known fact that cinders contain sulphur which rots tires. Wood floors rot out in a hurry, and dirt floors get soft in bad weather, and there is danger of a car getting stuck in its own garage, especially if the garage is in a low spot, and not well drained.

"A dry brick floor has an advantage over concrete or cement, in that oil and grease dripping from the automobile will be absorbed by the dry brick, whereas it won't penetrate cement. This means that a concrete floor is always greasy and damp.

"Old bats laid on edge make a very firm floor, and they can be laid directly on cinders, and at a very small cost."

In figuring up the cost of flooring a 14x20 foot garage with brick, the manufacturer gave the following table of cost—

Two loads of cinders, at \$1 a load.....	\$ 2.00
Two loads of bats, at \$5 a load.....	10.00
Work of man in laying bats.....	4.00
One load of sand over brick.....	2.00
<hr/>	
Total	\$18.00

Comparing these costs with a concrete floor at \$50 to \$65, it is easy to see that a considerable saving could be made where the resident, who is not blessed with a superabundance of this world's wealth, could arrange for a bat floor instead of concrete, while many of those who are using cinders, dirt or wooden floors, because they cannot afford a more expensive floor, would find this the right medium in dollars and cents.

The BUILDING SITUATION

BUILDING TOTALS in the New England district are drawing close to 1920 records, and now lead by a comfortable margin the banner year of 1914. The last week in August shows contract awards aggregating \$4,949,800, as compared with \$5,171,000 in the same week a year ago. In the corresponding period of 1918, the total reached but \$1,748,000.

The market is developing an even, firm tone that is helping the situation in inspiring the prospective builder that present levels are quite well established. The New England Brick Co. continues to quote common, sand-struck brick, delivered, at \$17 a thousand. New York brick is showing an inclination to drop a trifle and a number of dealers are turning stocks for \$19 a thousand as compared with a former prevailing figure of \$20. Connecticut production is holding at \$21 and \$22 on the job.

FACE BRICK PRICE STEADY

Selected water-struck brick is quoted at \$31 and \$32, while for kiln run material of this sort, the current quotations are \$30. A good rough texture brick is being sold at \$50, while other varieties of face brick are held at from \$40 to \$55, according to selection. Fire brick maintains its figures of \$60 and \$70 a thousand, delivered, the first figure being for regular No. 1 boiler brick, and the higher quotation for best grade material.

Standard sewer pipe is now 40 per cent. off list in the Boston district, while double strength material is 25 per cent. off. Flue lining is 40 off, and wall coping, 35 per cent. Terra cotta partition blocks, 4x12 inch, have declined from \$150 to \$140 a thousand, and 8x12 inch from \$280 to \$260.

PROVIDENCE PRICES REMAIN HIGH

A rather high-priced market level for burned clay and other building products still prevails in Providence, R. I., the statement being made in point of comparison at the present time with other centers. Common brick holds at from \$27 to \$30 a thousand, with a few sales down to a \$26 level for certain stock. Face brick is quoted from \$45 to \$60, according to variety. Fire brick, No. 1 Standard, ranges from \$80 to \$100 a thousand, delivered, at the different supply yards.

Vitrified paving block is selling at \$52 a thousand, for standard 3½x8½-inch material. Partition tile, 4x12-inch, holds at \$220 a thousand, and 8x12-inch material at \$390. Fire clay is selling for \$1.50 a bag.

NEW YORK USING ALL COMMONS COMING IN

Practically all of the common brick reaching New York from the Hudson River yards is being sold and distributed as quickly as landed; week ends show but one or two barge loads remaining on hand. The price continues at \$15 a thousand, wholesale, alongside dock, with dealers asking \$17.50 on the job. The growing strength of the market and scant supply, as regards weekly arrivals, is leading to the general impression that an advance in figures is not far off; \$16 a thousand is spoken of in the trade as the possible quotations, wholesale, for autumn business. There is no Raritan brick in the local market and no quotations.

The demand for face brick is improving, with a general trend following closely the common brick market. Prices hold from \$45 to \$54 a thousand, and there is no change in sight. Colonials, rough and smooth reds are selling at the lower figure; rough and smooth buffs are priced at \$50; while rough and smooth grays are bringing the peak figures at \$53 and \$54. Fire brick is selling for \$70 and \$75, delivered.

Partition tile for interior service, split furring, is quoted at

\$180 a thousand for 2x12-inch and 3x12-inch material; 4x12-inch stock is selling at \$200; and 6x12x12-inch at \$280 a thousand.

THE LABOR SITUATION

The downward trend in labor wage schedules continues in the New York district. In the Greater city, itself, there have been no developments between the employers and the men with regard to the proposed drop, as noted in late issues of *Brick and Clay Record*, and it seems likely that nothing definite will ensue until the first of the year, when present contracts expire.

There is little change in the labor situation in New York state, except at Albany and Newburgh, where masons have agreed to a \$1 a day decline, or from \$9 to \$8; in the first noted city, the men have entered into an agreement not to affiliate with other building trade unions. At Utica, the open shop is operative, with existing wage level at 85 cents an hour, or on the basis of \$6.80 for an eight-hour day. Bricklayers at Rochester have agreed to a rate of \$1.05 an hour as compared with a former figure of \$1.25. Other smaller cities in the northern part of the state show a corresponding decline.

ACTIVE BUILDING IN NEW JERSEY

The month of August rounded out almost twice the amount of construction in point of valuation at Newark, N. J., as the corresponding month of last year, the figures standing at \$1,638,344 and \$871,031, respectively. The year, however, is behind the 1920 totals for the first eight months, ending August 31, these being \$12,398,209 for the present year as against \$16,781,799 in 1920. Brick dwellings are on the increase, and greater demand is ensuing for common brick and tapestry material on this account.

Hackensack brick production is being sold at \$17 and \$18 at the kiln, with \$21 asked for average hauls for delivered material. There is considerable brick from this section being distributed thruout the northern part of the state. New York material in this same market is quoted at \$21 and \$22, delivered. In the Raritan River section, producers are finding a fair outlet for their material at around \$20 and \$22, delivered.

Trenton is selling local production at \$20 and \$21, with an \$18 figure prevailing at the kiln where yards are quoting on such character of business. In the majority of cases, an effort is being made to develop a practice of "on the job" orders. Seasonal yards have been making the most of the good weather and there is a large stock of material available in this section.

Greater call for production of face brick is leading to firmer price levels, and the range is narrowed at from \$45 to \$55 a thousand for the bulk of average business. Shipments from Pennsylvania are coming in in sufficient quantities for all current demand.

BUILDING IN PHILADELPHIA GAINS

The tide is turning in the Philadelphia, Pa., district, and for the first time in a number of months a gain is recorded for construction as compared with the same month of a year ago. The month of August shows a gain of \$629,855 over the corresponding period of 1920, indicating that at last the trend is in the right direction. The first eight months of the year, however, are far behind the aggregate in the same time of 1920, the amount being \$22,174,235. Dwelling work is easily the point of interest at the present time, and each week is developing better totals for new brick homes.

Common brick in Philadelphia maintains its \$20 figure, with indications that this quotation is here to stay for some time to

come. Prices on face brick hold at from \$40 to \$55, with far better demand for the material at the present time than in many months past. Rough texture varieties are still very popular and easily take the lead for distribution in the Quaker City. Fire brick is selling for \$70 and \$75, delivered, with demand rather low at the present time. Clay partition is selling at \$200 and upwards per thousand, according to size.

ACTIVITY AT WILMINGTON

Local brick manufacturers at Wilmington, Del., are holding to a figure of \$22 a thousand for common brick, delivered, with out-of-town production bringing a slightly higher figure. Face brick is moving under fair sales at \$45 to \$53, according to stock. Fire brick is operating under reduced call at an average of \$75, delivered.

BALTIMORE RESUMES CONSTRUCTION

Following a number of months of inactivity in construction, Baltimore is again advancing in the industry. The month of August has rounded out a total quite close to that of a year ago, when industrial operations were at a high point in this locality; at the present time, it is apartments and homes that are assuming the point of interest. The figure for the month just past stands at \$2,301,240, as against \$2,595,240 in August, 1920. A total of 139 permits for dwelling work of all kinds was issued during August, 1921.

The building material market shows no important change. Common brick is held at \$25 a thousand by the Baltimore Brick Co. and other producers in this district. Face brick ranges from \$38 to \$50, while fire brick is rather slow under a \$75 figure.

PITTSBURGH BUILDING ACTIVITY INCREASES

Construction work at Pittsburgh is following the trend of other eastern cities and the month of August, just closed, brings an encouraging aspect in the situation. The total valuation of plans filed in the month was \$3,386,872, as compared with \$2,018,374 in the corresponding month of last year. The August figures, also, exceed the July, 1921, totals by an amount of \$1,917,908.

Common brick at Pittsburgh is selling at \$20 and \$21, delivered, while fire brick is priced at \$70 and \$75 at the different yards.

A resumption of industrial and general building in Pittsburgh, Pa., is indicated by the 164 applications for permits to build for projects to cost \$3,008,078 filed with the city bureau of building inspection in the past two weeks. Of these one is for a 20-story building to be erected by the Bell Telephone Co. in the downtown section to house business offices and exchanges and another for a 15-story building for the Y. M. C. A. A large proportion of the remainder is for dwellings, the most part of brick or brick veneer construction.

Work is being pushed on the fifty houses now being constructed under the auspices of the Commerce Housing Corporation, organized by the Pittsburgh Chamber of Commerce to remedy the housing situation there. These fifty are for four groups of builders. Thirteen other groups are formed or are in the process of organization from among the 400 or more applicants who expect to take advantage of the opportunity offered them in home building by the Chamber of Commerce corporation.

IN THE CLEVELAND DISTRICT

Bigger gains in building activities, both in projects contemplated and actually started, during the last month in the Cleveland, Ohio, district, indicated to brick interests and material dealers that the corner has been turned in the construction industry. Using building permits as a barometer, the gain in the three principal communities in the territory is significant. In Cleveland the gain is 20 per cent. over the same period last year; in Lakewood the amount of work figured is double, and

in East Cleveland the improvement is nearly 20 per cent. above that of a year ago.

In contemplated work several large projects loom. In the upper midtown section another 16-story office building is planned, close to the now rising Keith Theatre and office building structure. It is probable that this project will require an outlay of about \$1,000,000, exclusive of a theater building adjacent, which will cost about \$300,000. The Pythian Temple and office building, now being planned, will cost \$4,000,000, and will rise at Superior avenue and East Ninth Street. A store and apartment building is planned for East Cleveland at a cost of \$350,000. In the lower Prospect Avenue section the Cutler Turkish Baths interests plan a structure costing about \$300,000. In the upper Superior Avenue business district in the vicinity of East 105th Street, a commercial and office building will be built at a cost of \$175,000. An appropriation of \$150,000 is being sought by the Cleveland Grays, national guard organization, which proposes to rebuild its armory, which burned last winter.

CHICAGO DIFFICULTIES ARE SETTLED

Chicago is now the center of interest in the entire country and building developments there are being closely watched. Since Judge Landis has made public his decision regarding the wage scale of the building trades and the new agreements between employes and employers, activity has quickened. The trades have accepted the judge's decision, the full text of which is given elsewhere in this issue.

One of the most important developments coming as a direct result of the decision is the pushing by civic organizations of the \$100,000,000 public building program, for which the bond issues have already been voted.

Construction of industrial buildings in Chicago and vicinity continues at a slow pace, the bright spot being the large number of permits issued for small houses.

The record of permits for apartment buildings has shown a steady decrease until the 1920 permits were scarcely more than two per cent. of those issued in 1915. In anticipation of the Landis award and because of the extreme need for homes, however, building permits have already begun a steady climb. More than \$60,000,000 of new building, now waiting for erection in Chicago, is affected by Judge Landis' decision. These include the \$15,000,000 Union Station, \$12,000,000 Illinois Merchants Trust Building, \$5,000,000 State Bank of Chicago, \$4,000,000 Belden Hotel and a score of other big projects running all the way from one to three million dollars each, which will be started soon.

Common brick is moving along at a fair rate tho the demand within the city proper is not very great; a large percentage of the brick are shipped outside.

TWIN CITIES TRAVEL STEADY PACE

Building in the Twin Cities is not showing any startling totals, but business continues to come in in small amounts. These small amounts, however, are coming in steadily and regularly and a fair volume of construction is being recorded. Work on the new station of the St. Paul (Minn.) Union Depot Co. will be discontinued at the end of this season's work it has been announced. Money stringency, especially in the railroad field, has been given as the reason. Plans are going forward for the erection of a Catholic academy in Minneapolis to cost about \$150,000.

LOUISVILLE TO BUILD 1,000 HOMES

Operations in Louisville, Ky., have been fair all season, but since June things have shown an especially good turn, and prospects are now bright for a good run of fall business. A number of brick, lumber and supply men are predicting good spring business, but others are afraid that building is a little too rapid

this year, which will result in lower rentals and a slump next season.

It is claimed that at least 1,000 new homes will have been completed in the city and county by the time snow flies. It was estimated by some of the building authorities that there was a shortage of 3,500 homes at the first of the year.

A report on building operations for the year closing August 31, showed 3,205 permits issued this year for work costing \$6,039,900 as against 2,482 permits last year for work costing \$7,859,570. Figuring the material reductions in materials since August 31, of last year, it is indicated that this year has been about as large, as reductions in building costs are held to be between 20 and 30 per cent. A good deal of last year's work was carried over into this year, whereas there will not be so much business carried over this year, as the units are smaller. June, July and August have been very active months.

BUILDING IN THE SOUTH

In Birmingham, Ala., the present tendency of the brick market is firm, with indications that prices will remain unchanged for at least a number of months, with some prospect of rising prices in the near future on account of the increased demand for building brick.

The city of Birmingham has commenced to erect a number of public school buildings which will cost upwards of \$3,000,000. Various other projects are also looming on the building horizon. Work will begin soon on a city auditorium costing about \$300,000. The Hebrew society will soon commence the erection of a large brick club house for the Jewish young men of the city. Louis Pezitz will begin the erection of a large department store building about January 1. This building will require a large number of brick.

A large number of small brick residences and business blocks are being built in the city and will be built in the near future. Owing to activities in the building of brick structures the demand for face brick is becoming greater than it has been since before the war.

Sewer pipe prices and other clay products, like the prices of brick, are holding their own well. The demand is good and growing and the prices are firm.

VIRGINIA RAIL RATES REDUCED

Thruout the South a number of large sized building projects are going forward and others being planned. In the opinion of the "Manufacturers Record," that section of the country is getting back on its feet and is showing signs of revival from the business stagnation.

In San Antonio, Tex., the First National Bank will build a 12-story building at an estimated cost of \$700,000. The erection of a 10-story office building is being planned for Houston, Tex. The building will be 54x100 feet.

An encouraging announcement comes from Virginia stating that railroads in that state have voluntarily agreed to reduce freight rates on building materials. Instead of the 40 per cent. increase in rates put into effect last August an advance of but 15 per cent. over the old rates will be made.

SAN FRANCISCO TRADES GO BACK TO WORK

After a period of idleness covering about sixteen weeks members of the building crafts of San Francisco agreed on August 29 to return to work as individuals rather than organizations and at a reduction of 7½ per cent. in the wage scale which was operative at the time they went on strike. The Industrial Relations Committee made up of employers has assured the craftsmen that an adjustment in wages will be made during the week of November 12, 1921, after advertising and a thorough hearing of individuals or representatives of both labor and employers. About 3,000 building craftsmen returned to work during the first week in September and there seemed to be a general feeling of relief in business circles that the much needed building program is to be continued.

The speed with which the building material depots are replenishing their supplies is enabling the contractors having unfinished jobs to start work on them sooner than previously expected. Nearly all of the plasterers and hod carriers in the city are now working. Heavy steel is now moving in quantity and the main structure work on five office and loft buildings in the business section was taken care of as in normal time. More than a score of riveting machines are now tapping busily on buildings that will cost into the millions. The breaking of ground for several new buildings has been the means of employing scores of laborers, and the Laborers' Union reports that a very small percentage of its members is now idle.

SOUTHERN CALIFORNIA CONTINUES FAST PACE

The tendency of the building market in Los Angeles, and indeed in all southern California, is slightly downward. There is a marked difference in the prices asked now and three years ago. The high rentals are causing many to buy or build who would otherwise be content to linger along as renters.

The building department of the city of Los Angeles issued 3,554 permits, a record number at a total valuation of \$7,015,861 during August, 1921.

Clay and concrete and all the various fireproof materials are favored in these buildings and the many clay products companies are too busy to speak to anyone who is not seeking something in their lines.

A number of very large buildings, running well into millions, are nearing completion in Los Angeles.

There is a great boom on in small bungalows, four and five rooms, and they are renting at \$35 and selling at from \$4,000 to \$6,000.

Labor never troubles the Los Angeles contractor because Los Angeles is not a union shop center; it has always stood for the open shop and this is one reason for its abnormal activity along all lines at the present time.

Riverside, Cal., has a large gain in building over last year, the valuation of its sixty-nine permits for August climbing well over the \$100,000 mark. A large number of attractive homes are included in the permits issued.

San Diego permits for the eight months just closed total \$4,158,939.

Glendale, a Los Angeles suburb, claims to hold the world's record for building during August, among cities of similar size. The building permits total \$576,545. The total for the year so far is \$2,900,000. Two large permits were issued in one day, so that it is expected the September record will be still higher. A church is to cost \$47,000 and a greenhouse, \$30,000. And this is but a small mention of the way that the smaller cities are climbing up.



Brick Triumphs Over Frame in Fire Tests

Chicago recently witnessed a test which should settle for all time the superiority of brick over frame houses as pertains to fire protection. The Chicago chapter of the National Fire Protection Association conceived the idea of building two cottages of equal proportion, one of frame and the other brick. Under direction of the fire department a bale of excelsior, saturated with five gallons of oil was scattered about in each of the houses. This was ignited and the results watched with interest. Within seven minutes the exterior walls of the frame house had begun to burn while the fire in the brick cottage burned merrily on the inside. When the fire department arrived it took it but three minutes to extinguish the flames in the brick house, while the frame house required 15 minutes' work. An investigation showed that the brick home could be repaired for about 20 per cent. of its total cost whereas the frame house was not worth repairing.

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

WAR'S EFFECT ON GERMAN CERAMICS



THE WAR which upset world-wide economics, naturally was the cause of extensive modifications in the German ceramic industry. Before 1914, the German manufacturer of earthenware and china, that is, of the "white wares" imported from the neighboring foreign countries various raw materials, for instance, feldspars and flints from the Scandinavian countries, the English ball and china clays, (these being special clays for china ware) and clays for earthen ware. The cessation of the

English importation particularly compelled Germany to find substitutes especially in view of the manufacture of sanitary stonewares and china ware for the electrical industries, for the manufacture of which, clays that are as costly as those used for fine ceramics cannot be used. The weakness of monetary exchange has prohibited the renewal of the importations since the end of the war. Great attempts have therefore been made east of the Rhine to adapt indigenous and Austrian raw materials, and these attempts have been on the whole successful, altho some times, they led to failures.

USE BROWN COAL

The chief trouble however, has been the shortage of coal. Numerous plants, including the Royal manufacturer of Berlin and the one at Dresden fired their kilns with wood. This procedure has created new difficulties and high expenses, since the burning requires a heat of 2,570 deg. F. corresponding to Cone 14. Others fire with brown coal briquettes of which the calorific power is 2,000 calories against 7,000 for the regular coal.

Another attempt to economize has been made in Germany by substituting belts made of paper for the leather and canvas stitched belts. Results have been very satisfactory, as they resist the wear and tear of use very well. It is even claimed that they slip less easily on the pulley than the cotton belts and that their durability is satisfactory.

A noteworthy development has also been made in Germany in the manufacture of crucibles and other laboratory apparatus from alumina, magnesia and pure zircon. These pieces are made of a great many shapes and sizes for high temperature, those of alumina and magnesia resisting a heat of 1,900 deg. C. and those of zircon 2,000 deg. C.

In Pottery Business Fifty Years

O. O. Bowman, Sr., Trenton, N. J., prominently identified with the J. L. Mott Co., of that city, celebrated his 84th birthday anniversary on August 23. Mr. Bowman has been engaged actively in the pottery business in the city for the past 50 years, and still visits the plant daily to conduct affairs. He is also one of the leading bankers in this section.



Sales Manager Resigns

William J. Mackey, for many years sales manager for the Southern Potteries Co., of Erwin, Tenn., has resigned, and removed his family to East Liverpool, his former home. The annual stockholders' meeting of this corporation was scheduled for August 17.



New Pottery to Open Shortly

The plant of the new National Art Pottery Co., of Coshoc-ton, Ohio, is under construction and probably will be opened the first of September. Native clay will be used for the pottery, according to officials of the company.



Will Make Electrical Insulators

W. H. Anderson, Denny, Tex., operating a local pottery, is planning for extensions in the plant for the establishment of a new department for the manufacture of insulators for electrical line service.



Exhibits Specimens of Pottery

At an entertainment given to teachers in Toronto for the summer there was an exhibit of some beautiful specimens of pottery made by F. W. Black in his shop at Bowmanville, Ont., from clay obtained near that town. Mr. Black expects to place this industry on a commercial basis.



Tile and Mantel Corporation

The Patton Tile & Mantel Co., of Cincinnati, Ohio, has been incorporated with a capital of \$10,000 to buy and sell tile and mantels and to install tile of all kinds. The incorporators are John W. Cowell, Grace Ast, Joseph Patton, Elenor Patton and James L. Patton.



Moves Offices to Plant

The general offices of the Pittsburgh-American China Co., which have been maintained in the Westinghouse Building at Pittsburgh, Pa., since the company was formed to build a plant at Greensburg, Pa., have been removed to that city.

It is said that operations will start soon in the Greensburg plant, and that general ware will be made in one department, and tile in another.

The offices of the Owens Tunnel Kiln Co., which were in the same suite, have been transferred to Zanesville, Ohio.

Operating at 75 Per Cent Capacity

The plant of the Steubenville (Ohio) Pottery Co. is now operating about 75 per cent. of capacity. The decorating shop of this plant is operating full time, while the clay shop is working on a schedule of probably two-thirds.



To Put New Shape on Market

William J. Mackey, for some years in charge of sales of the Southern Potteries Co., of Erwin, Tenn., has resigned that berth to take a similar position with the Hopewell China Co., of Hopewell, Va. This plant is the only one in the Atlantic Coast territory south of Maryland manufacturing dinnerware, and is now working five days a week. The company was recently reorganized, and plans to put a new body on the market at an early date. Its dinnerware decorations for 1922 have been selected, and the first sample lines will be presented the trade within the next two months.



A Mosaic Masterpiece of 1920

Harry Sternfeld, Pittsburgh, Pa., a student of architecture in the American Academy at Rome, Italy, winner of the "Prix de Paris," has discovered a mosaic masterpiece by Cosmodi, executed in 1210. In a communication to this country, it is set forth that the mosaic embellishes the great facade of a mediaeval cathedral at Civita, Castelana, near Rome. The entire facade is rich in color and glittering with golden fragments of stone which have stood the test of 700 years. The immense detail is almost unbelievable; the top of the loggia is one mass of mosaic done with variegated colors. It is said to be one of the best examples of outside mosaics ever seen.



Buyers Flock to Pottery Markets

During the last two weeks there has been a decided increase in the number of buyers who have been registered in the East Liverpool pottery district. Jobbing interests as well as department store buyers have been hurrying into the market, following the reduction of selling lists, which became effective as of September 1.

The majority of these buyers during the summer period, and for that matter since last spring, held off buying merchandise only for immediate requirements, and very few anticipated future wants to any extent. Now that the "lid is off" seemingly, the trade has been going into the market. As a general rule, pottery manufacturers are rather optimistic concerning the future, and before a few more weeks pass by, the majority of the shops will be working at least 75 per cent. of capacity.



English Potter Visits East Liverpool

"I have not been in the American pottery district for ten years, and I can see a wonderful advancement in that time," observed Bertrand Rhead, of Hanley, England, who made his fifteenth trip across the Atlantic a few weeks ago to show for the first time the decalcomania line of J. H. Butcher & Co., of Birmingham, England.

Mr. Rhead declared that while the coal strike, which lasted in England for thirteen weeks and seriously interfered with the operation of the Staffordshire potteries, has ended, not all plants have resumed. "It was a mighty serious situation which confronted the pottery trade," said Mr. Rhead.

During the idle period the available funds of the English pottery workers' union became exhausted and the union borrowed a lot of money to aid those out of employment.

Mr. Rhead will remain in the United States for probably a month, and is spending most of his time in the East Liverpool district.



Many English Plants Consolidate

With a capital stock of £500,000 eight well known English pottery concerns have been merged into the Cauldon Potteries, Limited, and the assertion made that "the combined businesses form one of the largest individual pottery concerns in the world."

The board of directors of the new company is composed of Harold T. Robinson, one of the biggest men in the English pottery industry, thru whose efforts the consolidation was effected, chairman; Walter Bakewell, Cuthbert Bailey, John Vivian, Goddard, James Alcock Robinson and Hubert Alcock Robinson. All firms taken over by the merger have representation on this board.

The new company boasts of over 10,000 customers on its books, but the number of kilns involved has not been announced. Eight firms totalling eleven plants have been absorbed, as follows:

Brown-Westhead, Moore & Co., established in 1774 and manufacturing high class table and decorative china as well as general earthenware and fireproof goods, which has had a large export business.

Ford & Pointon, Limited, china manufacturers, established in 1851 and operating under the plant name of "Norfolk Works" at Shelton, Stoke-on-Trent. The output of this plant has been confined to a medium class china for general utility purposes.

F. & R. Pratt & Co., Ltd., manufacturers of earthenware, and known among the trade as the "Fenton Potteries," Stoke-on-Trent, has featured a line of "useful and ornamental" earthenware and druggists' sundries. It was established in 1802, and the firm claims that it has had the same accounts on its books for upwards of fifty years.

George L. Ashworth & Bros., Limited, Broad Street Works, Hanley, have been known as the manufacturer of "Mason's Ironstone China," or earthenware. It has produced a line of tableware; and has been active in the shipping contract business. It also has made a special line of ware for the grocery trade and Scale Makers' Outfitting goods.

The Grindley Hotel Ware Co., Ltd., operating the Globe Pottery in Tunstall and the Sutherland Pottery, Fenton, was established in 1907 in a new model plant, and is reputed to be the largest producer of vitrified china in the United Kingdom. It has been specializing in the furnishing of ware to railway and shipping interests, hotels, cafes and public institutions. It has done a large export business with the United States and Canada. It is said that the major portion of the business of this company has been confined to export.

The Alcock Pottery, Ltd., Clarence Works, Stoke-on-Trent, has been a manufacturer of ware for general purposes, and also a line of fancy goods. This company first began business in 1829.

J. A. Robinson & Sons, Ltd., of Stoke-on-Trent, have put the four potteries under their control into the new trust as follows: Arkinstall & Son, operating the Arcadian Works, Hanley, Stoke-on-Trent, and manufacturing "Arms and Crest China." This plant was established in 1903. It has made a specialty of souvenir ware, and its business the last year has established a new high record in its career. Wardles' Art Pottery started business in 1857 and has been active since then. The business was taken over by J. A. Robinson & Sons in 1908 and since then the output of the plant has been augmented. Arcadian Works, of Hanley, Stoke-on-Trent and the Gordon Works, also under

the management of the Robinson Co., are made additional units of the new company.

* * *

China Company Resumes Operations

The clay shops of the National China Co., at Salineville, Ohio, resumed operations August 22 after a seven weeks idle period. The decorating department of this plant, however, has been very active in the meantime, and by such action, the company has succeeded in reducing its stocks to a considerable degree.

* * *

China Plant Changes Ownership

Announcement has been made at Wellsville, Ohio, of the sale of the William Hoyt China Co., to William Jackson, of Beaver Falls, Pa. The deal was negotiated thru a group of Wellsville business men. Consummation of the deal is considered as one of the most important in that locality in many years.

* * *

Porcelain Deposit in Nevada

Development of a huge deposit of kaolin, or porcelain clay, near Elgin, Nev., is being pushed by the American Clay Co. The management states a big plant is under construction at Burbank, Cal., for conversion of the clay into chinaware, porcelain utensils and dishes.

Japanese manufacturers are reported to have placed orders for 40,000 tons of the material.

The deposit is said to be one of the largest in America.

Aerial conveyors will transport the kaolin to loading stations on the Salt Lake & Los Angeles Railroad.

* * *

Ohio Pottery to Operate in East

The Roseville Pottery Co., an Ohio corporation, has filed notice of organization to operate in New York. M. T. Scott, 621 Fifth Avenue, is local representative.

* * *

Mt. Clemens Pottery Working 60 Per Cent.

Approximately 260 men are working at the plant of the Mt. Clemens (Mich.) Pottery Co. This means the company is operating at about 60 per cent. capacity. This pottery is owned by the S. S. Kresge Co. and table ware is shipped from the plant to all the Kresge stores.

* * *

Tile Works Busy

The Perth Amboy Tile Works, Perth Amboy, N. J., is maintaining production at a good rate and large quantities of high-grade floor tile and ceramics are being manufactured. During recent months the company has taken the benefit of the slack period to make a number of needed improvements at the works, bringing the different operating departments up to a high point of efficiency. August Staudt, president of the company, is optimistic with regard to the outlook.

* * *

Asks for Higher Duty on Clay

In a recent hearing before the Senate Finance Committee, Washington, D. C., with regard to the proposed new tariff bill, Milton A. Edgar, Metuchen, N. J., head of Edgar Brothers Co.,

clay miner, and representing, as well, the American Clay Producers' Association, with membership representing clay properties in North and South Carolina, Georgia and Florida, made an earnest plea for a higher duty than that proposed in the Fordney bill. He asked that the duty on imported clay and kaolin be increased to \$6 a ton, as against a present rate of \$1.25 in the Underwood tariff act, and proposed \$2.50 rate in the new bill.

* * *

Named to Assist in Discussion of Tariff

B. E. Salisbury, president of the Onondaga Pottery Co., of Syracuse, N. Y., and president of the U. S. Potters' Association, has been named as one of the three new members of the executive committee of the American Valuation Association, which has been formed to advocate the adoption of the proposed plan to base import taxes on the value of the goods at the American port of entry.

* * *

National China Co. Starts Up

After a period of inactivity lasting almost eight weeks the National China Co., of Salineville, Ohio, has resumed operations. The plant is now operating at about 50 per cent. capacity. Warehouse stocks have been depleted as the decorating department has been working steadily.

* * *

Kentucky Pottery Resumes

Manager S. T. Howard, of the Paducah (Ky.) Pottery Co., has announced that the operation of the plant will be resumed in a very short time with a full crew of sixty. The plant has been closed down for some time but the outlook for business this fall and winter is very good and many orders are already on the books.

* * *

Geo. Barlow Becomes Sales Manager

The United States Feldspar Corporation of East Liverpool, Ohio, has announced the appointment of George Barlow as its sales manager. Mr. Barlow for many years was engaged as a pottery decorator, but for about ten years was manager of the Roessler and Hasslacher Chemical Co.'s warehouses in East Liverpool. He is well known to the pottery trade thruout the country, hailing from an old stock of pottery workers.

* * *

Will Open Permanent Office in Chicago

The Potters Co-operative Co., of East Liverpool, Ohio, has decided to open a permanent office and sample room in Chicago, Ill., and space will be taken in the Palmer House. George W. McNicol, for many years in charge of the decorating department of the two plants of this firm, and who has just recently returned from a western selling trip, is slated for the management of the Chicago office. The "Banquet" and "Panama" dinner shapes will be featured in this sample room, as will be the line of salads and other specialties.

The Chicago office of this company heretofore has been in charge of William T. Darden, but since the death of Mrs. Darden in Chicago, Mr. Darden will work out of the home office, traveling the Middle West, West and Pacific Coast. He is now on his first coast trip, and is exhibiting the general line of both dinnerware and hotel ware of this firm.

CURRENT PRICES *of* COMMON BUILDING BRICK DRAIN TILE *and* HOLLOW BUILDING TILE

ALTHO there are fifty-five changes in prices as shown in the attached list it is only what could be expected in view of the fact that six weeks have passed and three issues have been printed since the appearance of the last previous list. This occurs only twice in a year. Of these changes twenty-three are in the prices of common brick, eleven in drain tile and twenty-one in hollow tile. The number of these changes, fifty-five, in a six weeks' period compare very favorably with the number of changes, fifty-six, made in the four weeks' period from June 14, to July 12, 1921. The first glance at the list would indicate that prices are fluctuating considerably, whereas considering the length of the period the changes are only two-thirds of what they were in the month of June.

It is true that most of the changes are downward, but it must be remembered that delivery charges are included in these prices, so that any reduction in the labor rate, in the cost of grain for a team, or of gasoline or repairs for a truck however small will show a corresponding decrease in the delivered price. Clay products manufacturers should therefore consider these items when examining the changes in this table of prices. A reduction in price on this table does not mean a reduction of factory price. Common brick prices at Scranton, Pa., seem to fluctuate in every list. On July 12, the price was \$22, on August 9, \$17 and this month it is up again to \$21. Miami, Fla., made a good gain in its price on hollow tile from \$160 to \$180.

	Common Brick Per M	Drain Tile (4") Per Ft.	Hollow Tile (5x8x12) Per M
Portland, Me.	32.00	.12	
Boston, Mass.	18.00	.08525	68.50
Providence, R. I.	28.00	.16	
Hartford, Conn.	17.00	.08	
New Haven, Conn.	25.00	.10	
New York City	17.50	.13	117.90
Albany, N. Y.	20.00	.09	200.00
Utica, N. Y.	22.00	.0745	
Syracuse, N. Y.	20.00	.065	135.00
Oswego, N. Y.	30.00	.06	
Binghamton, N. Y.	22.00	.06	
Elmira, N. Y.	30.00	.07	230.00
Rochester, N. Y.	18.00	.06	250.00†
Jamestown, N. Y.	25.00	.08	110.00
Allentown, Pa.	19.50		111.20
Erie, Pa.	25.00	.0525	80.00
Philadelphia, Pa.	20.00†		
Pittsburgh, Pa.	20.00	.06	66.00
Reading, Pa.	20.50	.07	
Scranton, Pa.	21.00	.08	
Newark, N. J.	21.00	.10	110.00
Paterson, N. J.	20.00	.105	
Trenton, N. J.	16.00		
Wilmington, Del.	22.00	.10	90.00
Washington, D. C.	22.00	.08	130.00
Baltimore, Md.	21.00†	.07	
Norfolk, Va.	17.00	.08	160.00
Richmond, Va.	20.00	.08	
Huntington, W. Va.	18.75	.075	85.00
Fairmont, W. Va.	28.00†	.06	85.00
Wheeling, W. Va.	22.00	.06	80.00
Atlanta, Ga.	12.50*	.09	87.60*
Miami, Fla.	25.50	.10	180.00
Tampa, Fla.	18.00		120.00
St. Petersburg, Fla.	17.00		120.00
Louisville, Ky.	18.00	.045	92.60
Lexington, Ky.	18.00	.08	80.00@
Memphis, Tenn.	14.50	.055	90.00
Nashville, Tenn.	18.00	.08	109.50@
New Orleans, La.	15.00	.075	
El Paso, Tex.	16.00		90.00

	Common Brick Per M	Drain Tile (4") Per Ft.	Hollow Tile (5x8x12) Per M
Houston, Tex.	18.00	.13	93.10@
Dallas, Tex.	20.00	.07	90.00
Topeka, Kans.	35.00	.065	115.00
Little Rock, Ark.	12.50*	.10	
Oklahoma City, Okla.	18.00		93.00
Cincinnati, Ohio.	18.00*	.055	68.00
Cleveland, Ohio	15.00	.047	58.00
Columbus, Ohio	16.50	.05	
Toledo, Ohio	15.50	.06	75.00
Detroit, Mich.	16.85	.06	79.00
Evansville, Ind.	14.00	.03	65.00
Fort Wayne, Ind.	18.00	.05	80.00
Indianapolis, Ind.	18.50	.05	67.50
South Bend, Ind.	20.00		115.00
Terre Haute, Ind.			
Bloomington, Ill.	22.00	.05	100.00
Chicago, Ill.			75.00
Moline, Ill.	18.00	.085	70.00
Peoria, Ill.	15.50	.0697	59.00
Green Bay, Wis.	14.00	.04	79.50
Milwaukee, Wis.	14.50	.05	100.00
Minneapolis, Minn.	18.00	.07	100.00
St. Paul, Minn.	18.00	.07	100.00
Davenport, Iowa	17.50	.07	113.00
Des Moines, Iowa	22.00	.08	75.00
Sioux City, Iowa	19.50		80.00
Kansas City, Mo.	22.00		100.00
St. Louis, Mo.	17.00	.10	85.00
Lincoln, Neb.	17.00	.08	73.50
Denver, Colo.	14.00	.08	85.00
Butte, Mont.	21.00		15.00§
Los Angeles, Calif.			100.00§
San Diego, Calif.	17.50	.105	120.00§
San Francisco, Calif.	18.50	.05	112.00
Portland, Ore.	17.00	.06	100.00
Seattle, Wash.	15.50	.072	110.00
Cheyenne, Wyo.	18.00		
Winnipeg, Man.	19.00	.13	181.00
Toronto, Ont.	18.00	.08	
Halifax, N. S.	20.00		
Quebec, P. Q.	16.50	.065	

Editor's Note.—The prices of the commodities listed above are reported as delivered on the job, and are, therefore higher than the plant prices. These prices are obtained from a sister publication, *Building Supply News*, and are sent to this paper by dealers in the various cities listed. *Brick and Clay Record* will appreciate any corrections. The prices marked in heavy type denote changes from last list.

*Little Rock, Cincinnati, Atlanta, f. o. b. cars.

†Philadelphia, Baltimore, f. o. b. job, manufacturers retail price.

§Los Angeles, Heath tile; Butte, per ton at yard.

@Hollow tile, Lexington, Nashville and Houston f. o. b. cars.

‡Hollow tile, Rochester—6 cell.

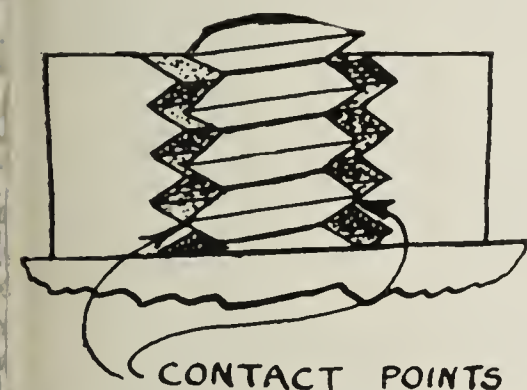
The SUPERINTENDENT

Helpful Hints for Practical Men Whose Problem is Maximum Production With Minimum Cost

Nuts Should Always Fit

Many amateur machinists never think of the fact that a poorly fitting nut should not be used on a bolt, especially if the function of the bolt is important, and if it must resist much of a pull. In fact, poor-fitting nuts should never be used.

The sketch shows that a nut of one thread, say twelve threads per inch, can be placed upon a bolt of ten threads per inch. It depends upon the thickness of the nut. If too thick you can get it on only part of the way. However, too many amateurs think—"Well if it will go on part way, why doesn't it go on all of the way" and then it is forced on with a wrench. In forcing it on the threads on both the nut and bolt are ruined.



How a Nut Looks on a Bolt With
Different Sized Threads.

the thread so that when the nut is forced on it does nothing more than "oppose itself" and ruins both nut and bolt.

Nor should nuts be used that are "too big" even tho they have the same thread and seem to fit except that they are very loose. Where nuts fit in that way they are held by the tips of the threads only and it does not take much of a blow to shear those tips off as you have perhaps learned thru experience.

In a nutshell—Use only nuts that FIT.—IV. F. Schaphorst.



Lubrication of Dryer Cars

It always seems unreasonable to use oil or grease to pack dryer car bearings and then send them into the heat of the dryer which may run from 100 to 300 degrees. The heat is bound to make either oil or grease more fluid and if the box is not made with a ground bearing or supplied with a gasket the lubricant will run out. At times it will be found that when the car comes out of a dryer, especially in a waste

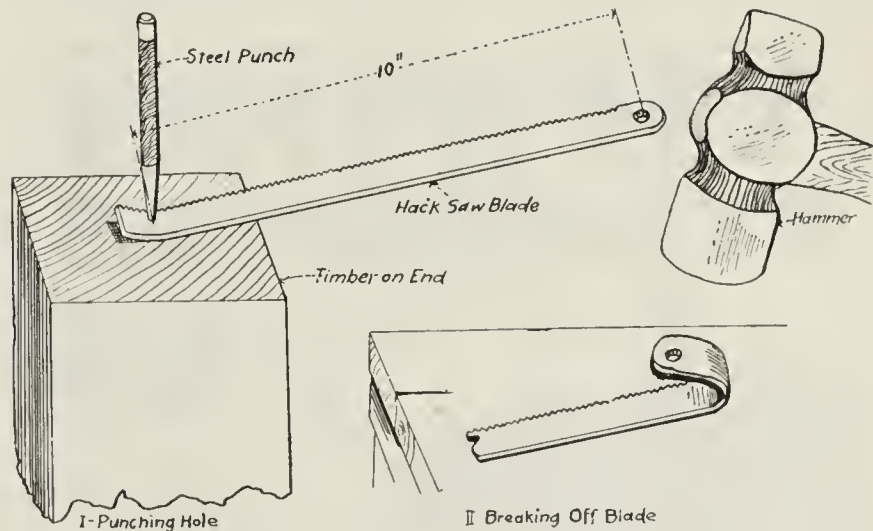
heat dryer, there is no lubricant in the bearings on this account, and the pushing of the car requires several men.

The oil and grease picks up any dust or dirt with which it comes in contact and the combination cuts the shaft more than either alone. This action is similar to the cutting action exerted by a combination of grease and emery on any valve seat or metal surface. To avoid this trouble clean out the bearings and rollers of the car and pack with flake graphite, taking care that the bottom of the box is tight enough to hold the graphite. If placed properly this lubrication will last a year. Several savings will result. The oil or grease that is ordinarily used will be saved—the labor of oiling will be avoided—the bearings will last longer—less labor will be needed to push the cars at all times and less material will fall off the cars in the dryer due to bumping one car against the others in order to move the string.



How to Shorten Hack-Saw Blades

A method of cutting down a hack-saw is shown in the accompanying illustration. To shorten the blade, one of its ends is annealed with a blow-torch or gas-light flame and is then broken off to the proper length by bending it down and



A Hack-Saw Blade Can Be Shortened Easily in the Manner
Shown Above.

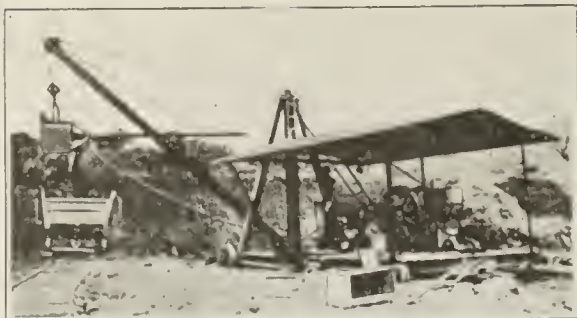
pounding on it, as suggested. Now a hole is punched thru this annealed end, to accommodate the pin on the hack-saw frame, as revealed at I, and the blade is ready to use. In annealing the end of the blade, do not heat it for too great a distance because any portion of the blade that has been annealed is worthless for cutting metal.

Fluxes Affect Speed of Burning

After considering the factors previously mentioned, it will be seen that in burning, you have the choice of two alternatives, a rapid rate of firing with a higher finishing temperature, or slower rate of firing with a lower finishing temperature. The procedure used will be somewhat affected by the raw material, the kind of ware made, and the size of the kiln in which the ware is burned. Of these, the question of the kind of raw material used is most important.

As a rule, the higher the content of fluxes, the more marked will be the influence of the time factor. For burning quickly, a safe burning clay must be had. Some clays will absolutely not stand up if they are subjected to quick burning. A high lime clay such as Chicago surface clay, ordinarily will give trouble in vitrification if fired rapidly.

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For the plant having a capacity of from 25,000 to 100,000 brick per day. Light, efficient, low priced, self propelling, one man operated. Gasoline or electric power. Track or caterpillar type mounting. Dis-

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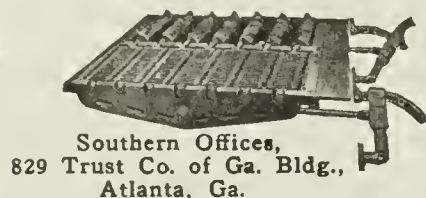
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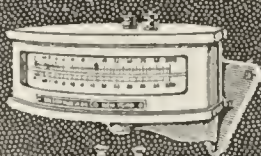
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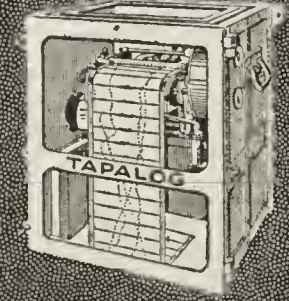
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You Advice That Will Stop
a Waste, Improve Your Ware
or Lower Your Production Cost

Address all communications intended for this department
to "Editor Questions and Answers," care of "Brick and Clay
Record," Chicago.

Sand Discolors Brick

994. Tennessee—I have to sand my brick in setting heavy to keep them from sticking, the sand burns white and the brick red and broken, thereby defacing the brick. I am using a coarse creek sand. Would a fine sand that burns dark be beneficial? I am using the old time up draft kilns, making rough texture brick, setting them faces together.

One method of overcoming this difficulty is to mix a quantity of red mortar coloring such as is used by brick masons with the sand. We suggest that you try several small batches of this material in different proportions so that you will be able to determine the exact mixture that you need.

Another method that has been suggested is to wet the sand with a small amount of copperas. This chemical can be purchased at a drug store for a small price.

✻ ✻ ✻

Desires to Build a Small Plant

991. Iowa—I know of a little piece of land that is fit for nothing unless it would be for making clay products of some kind. Now what is the smallest and most inexpensive layout that you know of, whereby hollow block or some other clay product could be made in a small way at a profit—something that a man of small means could handle; a clay specialty of some kind that is not being put out by all the brick yards. Can you not give me some pointers that would be of help to me?

In pre-war days, clay products manufacturers figured a cost of approximately \$1,000 per daily output of 1,000 brick. It is hard for us to give any estimate at this time because the prices are varying so much, and we do not know your local condition. We believe, however, that \$1,000 per ton of daily output would be a close estimate at this time.

Since a daily output of 25 tons is a fair minimum, we judge that you would require an expenditure of approximately \$25,000 as a minimum. This would include your cost of construction and capital for operation.

It is very hard to give you any advice when we know nothing whatever of the nature of your raw material, or of your possible plant location. The ceramic department of the Iowa State College, Ames, Ia., may be able to advise you further.

We do not know of any specialty in clay manufacture that we could advise you to go into. It would seem that if you do not know much of this line, it would be better to make hollow building tile, drain tile and building brick.

✻ ✻ ✻

Wishes to Make Salt Glazed Brick

992. Missouri—The writer who is interested in a shale brick plant in southern Missouri would be pleased to have your opinion as to the best method to be used in salt glazing a shale face brick which burns at a temperature of about 2,000 deg. F. Our kilns are of the rectangular down-draft type, capacity 150,000

and ANSWERS

Best Authorities in Every Clay working Branch Are Called Into Consultation—Their Advice is Free to You. Thru These Columns

Should a reply be desired by letter, send a stamped and addressed envelope with your question, and it will be answered promptly.

brick each, horizontal grates, ten furnaces on each side. We set 32 high, last 20 on top are set flat so as to flash same.

Would be pleased to know whether salting should be done on last two or three fires. Also approximate amount required for this size kiln, when same should be put in a kiln, and also condition of fires and temperature required at time of salting.

What effect will additional firing have on glaze after kiln has been salted? Any information which you or your readers may be able to give on this subject will be greatly appreciated.

Mr. E. A. Stewart, of the Stark Brick Co., of Canton, Ohio, has advised as follows:

"In order to glaze any brick well you ought to have an open bottom kiln and burn it at least to 2,000 to 2,100 deg. F. The glaze will not take unless the temperature is about 2,000.

"It is our experience that sloping grates are better than horizontal as the salt seems to run down between openings with horizontals. Salting is done after the heat has been raised to the proper temperature. We use about four barrels of salt to 50,000 brick. The salting is the last thing you do after you bring the kiln up to the proper temperature. About one or two ordinary shovels full, clay shovel, to every furnace. It is proper to fire after each salting so that you can maintain your heat. Eight or ten rounds of salting ought to be sufficient to get the proper glaze. It will not hurt to fire oftener if you can maintain your heat.

"To fire your kiln several hours after you are thru salting may develop the brilliancy of your glaze. As a rule, we do not fire our kilns after salting, but if your clay does not take glaze easily it may be the proper thing to do.

"You cannot expect a light glaze on a shale brick. It will be about the color of an ordinary dark sewer pipe. Unless you have an exceptionally good shale you will have a surface which will be very rough."

* * *

Desires Data on Belt Installations

993. Tennessee—What kind of belt would you advise me to use for the measuring belt, from the die to the cutter on a side cut outfit? This belt is subjected to oil and water. Another feature to be considered is, my clay sticks to this belt. Would a rough or smooth surface belt be best to relieve this condition?

I am also going to have to renew my conveyor belt, it carries dry clay from a platform to the disintegrator. What belting would you advise there?

Mr. F. R. Kanengeiser, vice-president and general manager of the Bessemer Limestone & Cement Co., who has had an extensive experience in operating clay products plants, says:

"My experience would indicate that you should get either a Balata belt or a plain woven belt without any filling for the offbearing belt. This plain belt stretches tremendously, but it takes up the oil from the column and is probably more satisfactory than any canvas belt or rubber belt. It is also cheap in first cost. The impregnation of Balata belt makes it impervious to the oil, at least to a degree, and is less liable to stretch.

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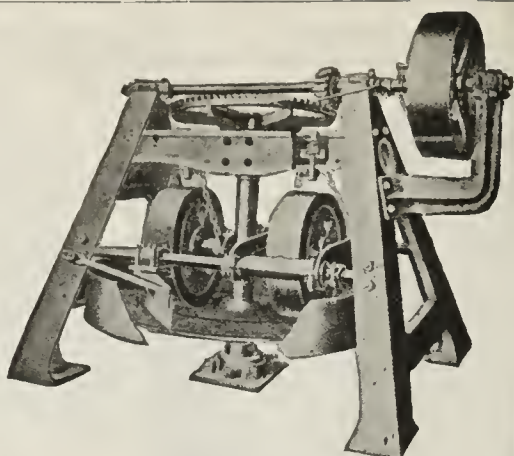
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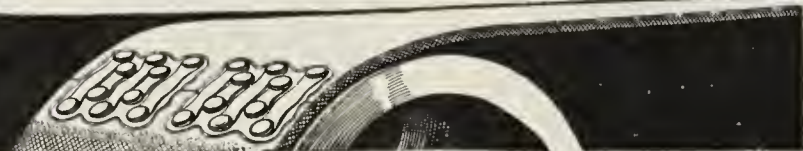
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"In regard to carrying dry clay, I would advise that in my experience there is nothing better than a rubber belt, preferably a belt with a light cover of rubber, the cover to depend entirely upon the abrasiveness and the hardness of the material. After all is said and done, most any belt will wear a very satisfactory length of time, if the carrying of material is all that is to be considered, but most belts are destroyed or worn out by improper installation and improper treatment after installation. By that I mean that they do not run true on their pulleys or over their supporting idlers, or the supporting idlers do not roll freely, thus permitting a friction and a tendency to draw the belt to one side, thus rubbing the edges and sooner or later destroying the whole belt. I believe this is as good advice as can be given to any man. After adopting the fundamental characteristics, the success of operation is naturally up to the owner."

* * *

Sewer Pipe Crack in Drying

986. *British Columbia*—We are troubled with our sewer pipe cracking, in the bell and socket in drying; the crack is in most instances only in the one place, but sometimes in bad cases a number will crack in three or four places, opening widely as the drying proceeds. The four inch and six inch are not subject to this defect, but the sizes above that do so in an increased amount as the size increases.

The clay is mined from a mountain near the factory and the face is into the hill at the present time about 100 feet, and we endeavor to weather it to some extent by tipping at two dumps and using from them alternately, which gives it from ten days to two weeks to weather. The clay is sprayed with water as it is dumped in dry weather. Then it is ground in dry pans and elevated and run over screens to a hopper which discharges into the wet pans; where it is pugged and fed to a Stevenson press, dried on slatted dry floors which are 84 feet by 274 feet. Slats are 3½ inches wide with ½ inch spaces.

I have made special effort to eliminate drafts by closing openings, at elevator doors and placing burlap screens round batches as they come from the press and have top of the socket for the first two or three inches, inside and outside covered with a thick black crude oil to retard drying at that part. These precautions have stopped the fault to some extent, but it is still bad and I would like to get at the bottom of it if possible.

The drying system is by exhaust steam conducted thru pipes under the floor joists and we put no heat on top of a fresh batch of pipe until the clay has its initial set. Steam is not kept up at night or when the factory is not working on Sundays and holidays.

The clay is somewhat of a plastic nature and makes a good sewer pipe, glazing at cone 5. Can you suggest anything else we can do to stop this mortality?

W. B. Harris, of the Coral Ridge Clay Products Co., South Park, Ky., who has had many years of sewer pipe manufacturing experience, has offered the following suggestions in the solution of the problems mentioned above.

"Would suggest that they try different amounts of grog, say two, four, six, eight and even ten shovels of grog in each mill of clay. If as he says his clay is 'somewhat of a plastic nature,' this may help him.

"Another thing they might try is this: As a rule the holes in the former on a sewer pipe die do not extend thru the lug that locks the former to the die, thus leaving a space on the former of two or three inches thru which no clay can be forced. By marking a few sockets where this dead space occurs, they can tell if the dead space causes the cracks and if it does, the former can be bored thru the lug. The clay may be pressed enough more at the point where there are no holes, to make points of unequal density in the socket."

Some other solutions for solving of these problems have been submitted by L. B. Rainey, superintendent of the Fallston (Pa.), Fire Clay Co. Mr. Rainey says:

"Not knowing anything about the type of clay used, it is hard to venture an opinion as to the cause of his troubles.

"He states that he can dry his 4 inch and 6 inch pipe without trouble, but as he gets into the heavier sizes, his troubles begin, increasing as the thickness of the walls of the ware increases. Of course, that is what you would expect if you had a delicate clay.

"His idea of painting the sockets with crude oil, to retard the drying is good. I have seen dampened burlap cloths, put over the large pipe, especially branches, etc., to retard the drying, with good results.

"I would guess that his trouble lies in the rate of drying his larger sizes, more than in any other thing, inasmuch as he successfully dries his small sizes.

"If his clay is too 'fat,' the addition of some less plastic material might help. Also, the addition of a small amount of some chemical, such as salt, soda ash, etc., at the dry pans frequently aids. This latter is based on the theory of deflocculation. The latter suggestion would have to be considered with respect to possible scumming, and also the salting process at the finish of the burn.

"I remember some experiments that we tried out, at one time, on a Western Canada clay, and we found nearly all of them, very difficult to dry. In fact, some of them could not be dried except by pre-heating. Of course, that is out of the question, where a large tonnage is to be handled. It seems to me that the best way for this man to get at this, would be to employ a competent man to go to the plant and familiarize himself with the local conditions. It is only a guess in the dark to attempt to offer a suggestion, from a distance, with no knowledge of the clay under consideration."

This question together with the answer appeared in the September 6 issue of *Brick and Clay Record* and is reprinted here with the reply of the questioner. Some of the suggestions made were adopted and found to work out very well.

"I have had no cracked sockets for some time, partly on account of more humid weather conditions, but partly on account of the many precautions I have taken. Mr. Harris gives a pointer regarding the holes in the die which also occurred to me and I went a little farther than his suggestion in closing up all holes in these sizes which seemed to be giving enough ribbon to supply all the vent needed and I feel sure this helped somewhat.

"I did not close the holes in the 24-inch die the last run and his theory regarding the lug appears to have some interest because altho I lost none of these the fault shows in the dry pipe, by the top of the sockets drying with a wavy top; about four distinct undulations occur, one being specially pronounced. It is not enough to make any difference in the quality of the pipe, but is noticeable to one looking for faults.

"I wish also to thank Mr. Rainey. He says every clay man's problems are his own, but sometimes a hint from outside helps him to get on the right track."

* * *

Federal Aid for Highways Delayed

Tho the revised federal-aid highway bill, introduced by Senator Townsend, passed the Senate recently the House failed to come to any agreement before Congress recessed. It was thought that when Senator Townsend abandoned the plan for the establishment and maintenance of a national highway system by the federal government, the main obstacle to the bill's passage had been removed. Apparently it is hard to have the Administration O. K. any appropriation however.

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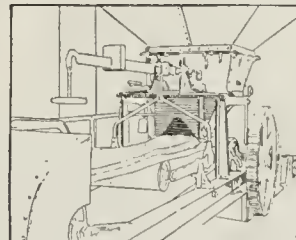
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The LETTER BOX

A Place Wherein Letters
That Have General In-
terest Are Published and
Commented Upon

Clay Industry Undeveloped in Colombia, S. A.

A letter was recently received in the office of *Brick and Clay Record* from F. A. Lux, a subscriber in Colombia, South America, in which he tells of the lack of fire brick and refractories plants in that country and describes the country as untouched and new in the clay industry. We reprint the letter below.

"There are practically no fire brick plants or plants representing the refractories industry in this country, and I think that the only importation of refractories material in any considerable amount comes from the oil interests. These people are also the only ones able to give any reliable information as to the deposits of fire clay in this country, as they have a highly efficient geological staff looking for oil all over the country.

"I know of some very fine deposits of kaolin near the Sierra Nevada Mountains. Near this coast there is plenty of white calcareous clay, which, after washing gives a good fire resisting brick. A very sandy clay, like lehm, is also found which gives a better fire brick, but which, in my opinion, needs to be finely ground and burned to get a compact and sound brick out of it. The sand, in this clay, is pure silica of about one millimeter diameter, with some lumps ranging from $\frac{1}{4}$ to one inch in diameter. It is colored brown, white and green. We use this clay with good results in our brick and lime kilns.

"This is an absolutely new country and nothing has been done relating to the clay industry. So if you are interested in this country I will gladly help you and you need not be afraid of bothering me."

Here, it seems, might be a splendid opportunity for any American manufacturer who has ambitions to extend his activities outside of the United States. Instead of competition from his competitor he would be aided by him and welcomed with open arms.

✱ ✱ ✱

Takes Exception to Editorial

The following letter was received recently in the offices of *Brick and Clay Record*, from N. P. O'Neal, of the Hope (Ark.) Brick Works:

"Please turn over to your editorial columns in the September 6 issue and re-read that item about the farmer. Then tell us how you can figure a \$1 cut from a salary of \$100 to equal the farmer's cut on wheat, oats, rye, corn, cotton, and a hundred other farm products?

"This brick plant also runs a farm, we raise no cotton, but we are now selling hogs at eight cents per pound that last year at this time we sold for 15 cents per pound on foot. We have corn to sell that will bring us 50 cents per bushel, whereas 12 months ago it was \$1.60; molasses is now 50 cents, last year it was \$1.25 per gallon; cotton is 20 cents, last year it was 35 cents per pound, and cotton has been down as low as eight cents per pound this summer.

"There is a tendency for publishers and copy writers to preach Christian Science doctrines; self deception. Everybody is telling the clay man that it is his own fault if sales are slow, but is it? Our plant will run the year out and make some money, but somebody has to grind like the devil to find the place to sell the stuff and to finance a large stock from start to finish, so the wheels will keep turning."

Evidently the editorial in the September 6 issue of *Brick and Clay Record* regarding the condition of the farmer, was not very clear, and did not convey the impression which we hoped it would. It is unquestionably the truth that a cut of \$1 from a \$100 salary does not compare at all with the large losses which the farmer has had to put up with.

The editorial was not intended to cover the reduced unit

prices for farm products. Everyone knows that the farmer has had to sustain great losses on account of the reduced selling prices of his products, and the idea this editorial was supposed to convey was that altho the failure of crops would lop off \$250,000,000 from the farmer's income, this \$250,000,000 would not make a difference of more than one per cent. in the farmer's buying power, inasmuch as the average annual turnover of the farming business is \$25,000,000,000.

It would of course be folly on our part to attempt to say that the losses which the farmer had to sustain on his products, due to the greatly reduced selling prices, would not amount to more than a \$1 cut from a \$100 salary.

* * *

"Griff" Tells "Perk" About Brick Pavements

Below is reprinted a bulletin sent by the Eastern Paving Brick Manufacturers Association to its members. In this letter of "Griff's" to his friend "Perk" some of the strong points of vitrified paving brick are brought out in a manner which is extremely interesting and clever. Wm. C. Perkins, chief engineer of the association, is the "Perk" to whom the letter is addressed and who is to be commended for the clever bulletin. It reads as follows:

Dear Perk:

When i left little ole New York to take a trip in my lizzie to see the Grand and Glorious Country of the U. S. A. i says to Mary: "i wish we had a big car becauz when we leave the old town behind we will leave the good roads behind too and a big car would take the jumps better than the lizzie." But i see how i don't know what i was talking about becauz i seen more good streets out of N. Y. then in it.

We went first 2 Phily and on account of it beeing half dead we didnt stop there long as we was afraid we might end up in a cemetery too soon. So we kep rite on & soon was in the big mountains goin' to Pittsburgh out in the western part of Pa.

Of course we got all kinds of roads on the way, asbestos, which must cost an owful lot of money after you furst buy it cauz they must have been a gang each 100 yd. putting some more of it in the holes. Some of them looked like the pants used to wear when i was a kid. Mostly patches. Then we got lots of concrete roads. They was all covered with crooked lines in black, across the road, up & down the road & all over the road. Maybe they done it to make it look pretty but believe you me, it aint my idee of anything butiful but maybe i aint no judge.

Then we come to some roads made of petrified brick and let me tell you, no kidden either, they was the best roads i ever seen. Was they smooth? say Perk i just felt like i was floating along in a Rolls Royce. i didnt have to watch for no holes cauz they wasnt any.

And say Perk let me tell you something funny. We was in the big hills jest this side of Pittsburgh when it started into rain and did it rain? i never seen so much rain all at once. An here we was on top of a hill & the nearest town down in the vally and me with no chains in the car so we just stood her in the rain. i didnt dare move as i was afraid of skidding. An that road was so crooked & steep and me being right shy of skidding on account of—well you no that time you was with me when we skidded on 5th ave. in the rain & was most run down by a bus. But soon a fellow come along in a lizzie and asks me was i in trouble, i sez, 'Oh no, unless you call it trouble to be stuck up here in the rain.' And i sez i was afraid of skidding down that mountain road and never seei little ole N. Y. again. But he says, "You wont skid, i told you. Road is brick, watch me." & off he went again round curves & just seemed as if he had something on his tires. So i tried to, slow at first but soon i was going just as fast as if it as been dry & did i skid? i did not.

So believe you me, when i go back i sure am going to see the guy that puts down the streets and ask him why he doesnt give us more of them brick streets. i kind of laughed when i first seen them as i thought they were pretty slow out here. It i gess i done know everything yet.

Well Perk i must close now as we got to get some sleep for our trip tomorrow into Ohio and they tell me they have lots of brick roads there so i aim to have a good rest and not worry.

Yours,

Griff.

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\$8.40 per dozen—\$96.00
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Let us send you a trial dozen pairs of our Kant-rip Mittens and a dozen of our Hand Pads of the same material. Try out a pair of each on one of your men—if you are not entirely satisfied with the results, just return the remaining eleven pairs at our expense. There will be NO obligation for the used pair.

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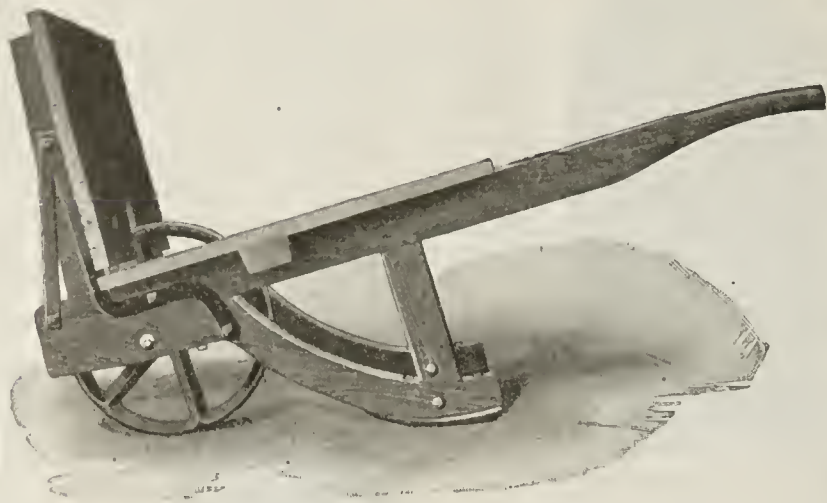
THE RUST SPECIAL Feeder-Mixer is made extra strong for hard work and large capacity. All gears run in oil and are protected by housings that keep out the dust and dirt. The MARION will invariably pay for itself in less than a year. It saves the labor of 3 or more men.

A special bulletin which covers our line of clay feeders and mixers will be sent to you without obligation. These machines have been such a help in improving ware, speeding production and saving labor, that we urge you to ask for this bulletin today.

Remember there is no obligation.

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The Invincible Barrow



This favorite barrow has lost none of its popularity. We furnish them for either brick or sewer pipe and with plain wood, babbitted or spring bearings. They are honestly constructed thruout. On account of increased manufacturing facilities we are able to make immediate delivery.

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"PEABODY FOR SERVICE"

IN *the* WAKE of *the* NEWS

Being Brief Mention of a Host
of Interesting Happenings in the
Varied Fields of Clayworking

Clay Plant Official Passes Away

William M. Miller, vice-president of the Claycraft Brick Co., of Columbus, died at his summer home in Michigan, September 2, from a complication of diseases, at the age of 64 years. He was also president of the H. C. Godman Co., a corporation which operated four shoe manufacturing plants in Columbus and also four in Lancaster. Mr. Miller was really the founder of the shoe business and was its president for years. He was born in Lancaster and came to Columbus at the age of twenty-two, when he started as a clerk in the leather and findings business. Later he branched out into a manufacturer. He was connected with a number of financial institutions of the city.

J. J. Neer Passes Away

Jesse Joe Neer, youthful secretary of the B. Mifflin Hood Brick Co., of Atlanta, Ga., passed away on Saturday, August 27, 1921. Mr. Neer was connected with the B. Mifflin Hood Brick Co. for fifteen years and was rated in Atlanta as a business man of considerable ability. He was a widely known face brick man, his acquaintance extending thru the entire eastern section of the country and not limited to the South. He was born in Ohio and came to Atlanta when very young. He is survived by his wife; a brother, and two sisters. The many friends which he made and kept in the industry will learn with sorrow of his death.

New Product Very Satisfactory

The first brick made by the new Alabama Brick & Tile Co., of Albany, Ala., were taken from the kilns September 1, and are thoroly satisfactory. At the present time 20 men are employed.

Alabama Plant Begins Work

Work has been resumed at the plant of the Alabama Brick Co., at Sylacauga, Ala. The plant has not been running steadily since the break in prices but the men are now working under long term wage contracts, it is said. Approximately 110 men are employed.

Birmingham Outlook Exceedingly Bright

The face brick plants of Birmingham, Ala., are now operating at normal for the first time since the slow-down in business commenced several weeks ago.

John W. Sibley, of the Birmingham Clay Products Co., said, "We are not only operating at normal, but we are shipping more than we make.

"Our forward orders also are more than we are making. This means that stocks which had accumulated are going down, and that if the pace continues we are headed to shipment from kiln to job.

"Our brick is going over the southeast. Our orders come from Florida, Georgia, Tennessee, Mississippi, South Carolina, in addition to our orders from Alabama. Florida has been taking a large amount of face brick for some time, but the states named have also gotten into the game, and are having shipments made right along."

Birmingham brick manufacturers are more optimistic now than they have been in a number of months, or since the financial depression commenced. Local orders together with orders from other states will keep the Birmingham brick plant in full operation, it is thought, in the future.

Los Angeles Co. Will Enlarge

A recent purchase of 600 acres at Alberhill, Cal., by the Los Angeles Brick Co. for another plant will materially increase the capacity of the company. All types of clay are found on this property, which will permit the company to manufacture all kinds of brick. Hollow brick walls were pioneered in Los Angeles by this company, and hollow tile construction is now general thruout the country. Officers of the company are: M. H. Newark, president; E. W. Murphy, vice-president; L. S. Collins, general manager. Offices at 514-515 Security Building.

Shipped Terra Cotta to Hawaii

An imposing new department store and warehouse building has been completed recently in Honolulu. The terra cotta for this elaborate building, which covers an entire block in the heart of the business district of Honolulu, was manufactured by Gladding, McBean & Co., of San Francisco, Cal. The building is distinctly impressive in design and color, for the oxidized copper colored shades of terra cotta blend well with the natural colors of the island metropolis and make it typically Hawaiian. The building is four stories high, each story having a mezzanine floor. There are arcades on two principal streets, a roof garden and all that goes with a modern, fireproofing building. The architect was Louis Christian Mullgardt, F. A. & A., of San Francisco and Honolulu.

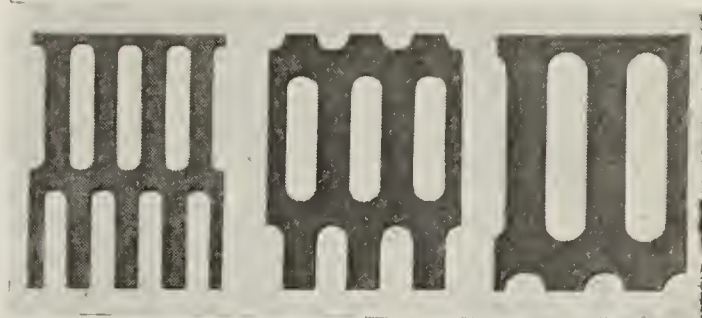
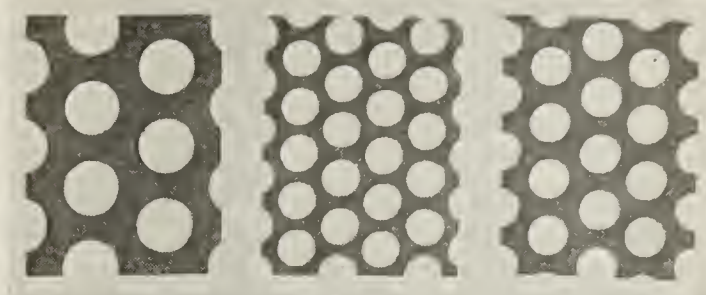
Obtain Large Contract

Gladding, McBean & Co., of San Francisco, Cal., has been awarded the contract for brick and terra cotta for the new Standard Oil building, the largest office building west of Chicago, which will be located just opposite the old Standard headquarters at Bush and Sansome Streets, in San Francisco. It is expected that the structure will occupy some two years in building and will cost approximately \$4,000,000. It will be twenty-two stories high with an area of 28,325 square feet and 425,000 square feet of floor space. George W. Kelham is the architect and the Lingren Co. are the contractors. The terra cotta and granite faced brick for the building will be made at the Gladding, McBean & Co.'s plant at Lincoln, Cal. The roof will be of Spanish red tile and the promenade on the roof will be of promenade quarry tile.

Claims Second Place in Roofing Tile

About 4,000,000 roofing tile will be produced in 1921 by California's clay products' manufacturers, according to Howard Frost, president of the Los Angeles Pressed Brick Co., in a statement prepared for A. G. Arnoll, manager of the industrial department of the Los Angeles Chamber of Commerce. This data will be used to inform manufacturers and architects about this phase of the clay products industry, which has grown to enormous proportions in the last few years because of the increased use of more durable and fire-resisting materials in the construction of homes and commercial buildings. Mr. Frost puts this state as second in the production of roofing tile in the United States, the ranking position being claimed by Ohio, where the industry was developed long in advance of California. It is also shown that the Los Angeles Pressed Brick Co. produces approximately 75 per cent. of the roofing tile manufactured in the state. Because of the superiority of the clay found in that section the tile manufactured there are considered of very high quality.

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All sizes and shapes of holes in metal of proper thicknesses to give the best screening results.

Sheets furnished flat or rolled to shape for revolving screens.

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You won't have to worry about competition if you treat your clay with

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You can safely guarantee that your brick will be

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You can get a higher price and influence architects to specify your product because Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's dependable.

We have a complete line of high grade chemicals for the clay industry

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WHAT METHOD DO YOU USE?

This question when applied to the manufacture of Stiff Mud Ware deserves consideration.

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THE ROLLER PRESS for all clays, shales, fire clays, surface clays, short bonding clays and laminating shales and clays.

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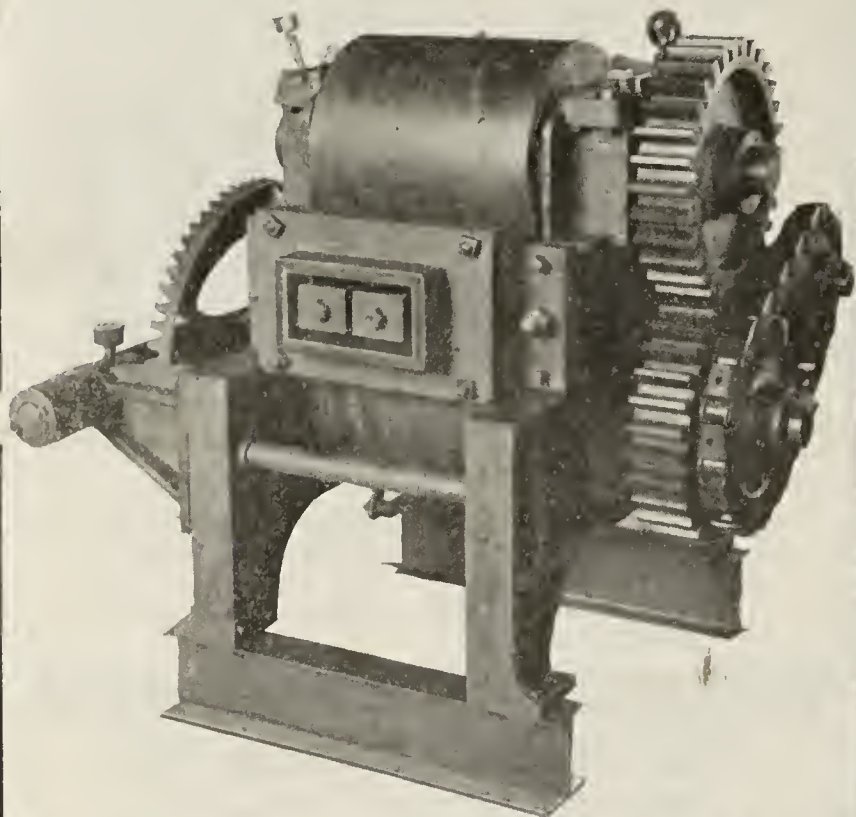
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Colorado Plant Resumes Operation

The La Junta (Colo.) Brick & Tile Co. resumed operations September 5, and the management reports that there are enough orders in sight to keep the plant in operation all winter.

Organizes to Mine Clay

The Speer Sand & Clay Works, Wilmington, Del., has been organized with a capital of \$300,000 under state laws to operate clay properties. The company is represented by the Corporation Service Co., Wilmington.

Building Material Co. to Make Brick

The Florida Building Material Corporation, Ocala, Fla., recently organized, is planning for the establishment of a local plant for the manufacture of brick, tile and other burned clay building products.

Florida Firm Prepares for Large Business

Gamble & Stockton of Jacksonville, Fla., have enlarged their holdings in recent months to enable them to better satisfy the purchaser of building supplies. Part of their holdings consist of the clay working plants at South Jacksonville, Fla., and Columbus, Ga. The Columbus plant was recently rebuilt and enlarged, and represents an investment of more than a half million dollars. It is under the direct management of C. W. Dixon, a Florida man, and has a daily output of 150,000 brick and 150 tons of hollow tile.

At Columbus, Gamble & Stockton control an almost inexhaustible supply of clay that for brick and tile products is unexcelled. There is practically no overburden to remove, and a system of manufacture has been worked out that provides a uniformly high-grade quality of brick and tile at low costs. A large number of the finest buildings in Florida have been constructed with Denison interlocking tile and brick supplied by this company, it is said.

Claude Roper of Jacksonville is sales manager and Hugh B. Cowan one of the traveling representatives.

Illinois to Pave 189 Miles of Roads

Bids on the greatest amount of road and bridge construction work Illinois has ever offered to contractors at any one time will be opened by state highway officials on October 4. The offer includes 189 miles of paving in 18 different counties; 73 miles of heavy grading preparatory to paving in ten counties, and 69 bridges, in fourteen counties.

Facts From One Plant

The August issue of "Shaletex Topics," the monthly published by the Streator, Ill., Brick Co., is just as attractive and full of pertinent topics as ever.

From one page we quote the following, which should be absorbed by every other manufacturer:

"Did you know that at the end of January, this year, building activity was six per cent. behind the average for the preceding five years and that at the end of May, this year, it was 11 per cent. ahead of the average for the first five months of the preceding five years?"

Working 65 Per Cent. of Capacity

The Kokomo (Ind.) Brick Co. has kept up production to 65 per cent. during this season, despite the adverse conditions in the building industry.

Future prospects are good and it is expected that with a little further adjustment of conditions it will be possible to sell the full capacity output of the plant. The Kokomo Brick Co. is the successor of the J. M. Leach Brick Works and was incorporated in April, 1920, with an authorized capital of \$100,000. The officers are: J. E. Frederick, president; D. W. Butz, vice-

president; Elmer E. Danner, secretary; Willis B. Dye, treasurer and O. M. Booher, assistant secretary and general manager. Other members of the board of directors are: A. G. Seiberling, Mark A. Brown and D. C. Jenkins.

Operating Plant at Capacity

Machines at the plant of the Standard Brick Manufacturing Co., Evansville, Ind., are running at full capacity. Many orders are on hand and the company is shipping brick in large amounts, supplying the local and foreign fields. Orders are being received from points outside of the Evansville territory; a large one has recently been received from a New Orleans concern. Some building projects in Kentucky are also being supplied.

Must Replenish Stock

L. R. Whitney of the National Drain Tile Co., of Terre Haute, Ind. has announced that the plant at West Terre Haute will resume operations on September 12. The plant was closed down in June. Most of the 75 or 80 employes have been kept at work making additions and putting in repairs.

The company always aims to keep 200 carloads of drain tile in stock, but recent orders have reduced this stock to about 75 carloads. This reduction and the fact that orders have been received for more than 200 carloads, with more in prospect justifies the expectation that the plant will be able to operate for many months.

Closes on Account of Costs

The Independence (Kans.) Paving Brick Co. closed down September 1, on account of the high cost of making brick and the low price received for them. Harry Jeincke, owner, of Kansas City and Manager S. W. Gibson hope that the shut-down will not last very long.

Better Prospects for Fire Brick

The Louisville Fire Brick Works is operating part time at both of its Kentucky plants, but reports that prospects are looking better than they have been, as a result of better prospects in the metal trades.

Many Small Orders Make Fair Total

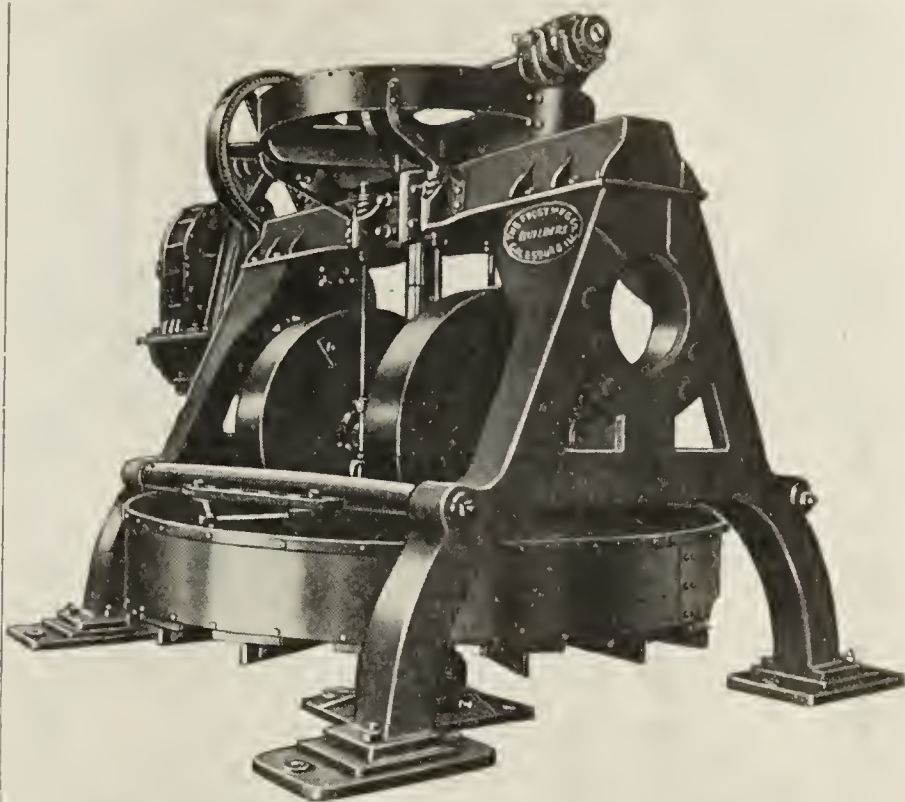
A. H. Fairleigh, of the R. B. Tyler Co., dealers in brick and building supplies at Louisville, Ky., reports that brick sales as a whole have totaled well, there not being many large orders, but a considerable number of small ones. The Louisville Builders' Supply Co. has about the same report to make thru A. E. Livingston, president; and Leo M. Parsons, of the building supply department of the R. C. Tway Coal Co., handling the Hytex line, also reports improved business in small orders.

Find Many Fine Clay Beds in Kentucky

Elliott County, stripped of much of its timber on the divide between the Sandy and the Licking, and containing thin and uncertain coal measures, may be one of the richest counties of Eastern Kentucky, when a railroad is built into it, according to a report on Kentucky clays by Prof. R. H. Ries, Cornell, authority on the subject.

Professor Ries has inspected the clay deposits of the state from the Purchase to the Sandy Valley and he finds that Elliott County's deposits of flint fire clays far excel those of Rowan and Carter, where extensive plants are located. Its beds are in many instances 25 to 30 feet thick. Kentucky's clays will last at the present rate of production another century.

The geologist found immense quantities of commercially



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available clay in all sections of Kentucky. There is an almost inexhaustible supply of good pottery clay in the Purchase. He has traveled 3,000 miles over the state and is now engaged in making burning and analytical tests of his samples and working on his manuscript, which should be ready about November 1.

Professor Ries is one of the experts, who have been making an economic survey of Kentucky's natural resources for Dr. Willard R. Jillson, director of the Geological Survey.

Louisville Companies Exhibit at State Fair

Several companies have exhibits at the Kentucky State Fair, which opened at Louisville on September 12, including exhibits of Natco tile for silos, etc., a display of building face brick by W. E. Whaley, Louisville dealer, and a joint display by the Coral Ridge Clay Products Co., and the Southern Brick & Tile Co.

The good fellowship which is now existing in Louisville, which a few years ago was torn by jealous fights and brick wars, is shown in the co-operation of the Southern Brick & Tile Co. and Coral Ridge Clay Products Co., at the Kentucky State Fair. In order to make a good exhibit without too great expense, the two companies secured two of the smaller booths in the new Merchants & Manufacturers Building, and by putting them into one, are handling a joint display of interest. The Coral Ridge is showing hollow building tile, tapestry brick, common and face brick, while the Southern Brick & Tile Co. is showing common and face brick and drain tile. The display is attractively arranged and attracting some very fair attention.

Clay Company Organizes in Baltimore

The P. C. Lavoie Co., Garrison Road and the Pennsylvania Railroad, Baltimore, Md., has been organized under state laws to manufacture brick and other burned clay products. The company is headed by Peter C. Lavoie, 1608 Hollins Street, Baltimore, Henry Massart and Benjamin L. Freeny.

Pays Labor \$2.50 Per Day

Resumption of building has increased the demand for its products to such an extent that operations have been resumed at the plant of the Conococheague Brick Co., at Williamsport, Md. About thirty men are employed, a report states, at a wage of \$2.50 per day. Even at this low wage the company can secure all the labor necessary.

Eastern Company Incorporates


The E. L. Cook Brick Co. of Titticut, Mass., has incorporated with a capital of \$100,000, Ernest L. Cook, treasurer, Bridgewater, Mass., and Wayne S. Atwood, clerk.

Fire Does Considerable Damage

The yard of the West Brimfield (Mass.) Brick Co. was damaged by fire on August 27 and the destruction of the plant was only prevented by the good work of the firemen some of whom came from the adjoining town of Palmer to assist. In order to reach a water supply the firemen were obliged to run their apparatus thru the yards among the burning brick racks to a pond. This was accomplished and the blaze extinguished before it had made great headway. The loss was estimated at \$1,500.

Minnesota Will Find Out Why Drain Tile Fail

The Minnesota experiment station, and state department of drainage and waters are cooperating in a thoro investigation of the causes of failures of drain tile and of the means of obviating such failures. A special appropriation by the 1921 legislature of \$5,000 a year for the next two years providing for the ex-



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tension of these investigations begun by the federal government two years ago in southwestern Minnesota, has resulted in the equipping of a special laboratory in the Engineering building at University Farm, St. Paul, with a trained chemical engineer in charge to make the necessary analyses of soil waters and tests of tile and materials. All those interested in the promotion of permanent tile drainage and especially public drainage officials have been urged to cooperate at least to the extent of making use of this new branch of public service.

Resumes Digging Clay

The Wellsville, Mo., clay digging plant of the Laclede-Christy Clay Products Co., of St. Louis, Mo., has resumed operations. This plant supplies the brick making plants of the company located at St. Louis, with Missouri flint clay.

Missouri Will Pave 1,500 Miles of Roads

Missouri is to spend \$29,000,000 for the construction of 1,500 miles of paved highways. This is a part of the highway program adopted by the state recently when the bill authorizing the use of the \$60,000,000 bond issue for the construction of a state highway system, became a law. In addition to the sum appropriated for hard surfaced highways, \$31,000,000 is to be spent on the building of 7,300 miles of gravel roads. No bonds will be issued until March 1, 1923, when a total of \$10,000,000 will be issued. \$5,000,000 will be the annual appropriation thereafter. The state will appoint a highway commission of four members.

Work Begins at Tile Plant

The tile plant of W. F. Norman & Co. in Nevada, Mo., has resumed operations after a lengthy shut down and is now turning out drain tile by the car load. One of the chief products of the plant is tile block used so extensively in building operations. The plant is one of Nevada's biggest manufacturing enterprises and employs a large force of men, so that its resumption will mean much to the business life of that city. Sufficient orders have been received to run for some time and if business conditions improve as has been predicted by bankers and other business heads it is likely that the plant will be kept going for an indefinite period.

Stop Work to Dispose of Stock

The plant of the W. S. Dickey Clay Mfg. Co., Rich Hill, Mo., has been shut down, and Manager Myers says it is problematic as to when the plant will resume operations. The yards are full of manufactured products and the management found it necessary to close the plant until the surplus has been disposed of. As soon as a healthy movement of any one certain line is started the plant will be reopened. Reports reaching there are that building operations in several of the large cities will be resumed on a large scale as the result of a settlement of labor differences and if this is true brick and clay plants should get under way in early fall or winter. The plant there had been running steadily since the first of May.

Hollow Tile Plant Re-Opens

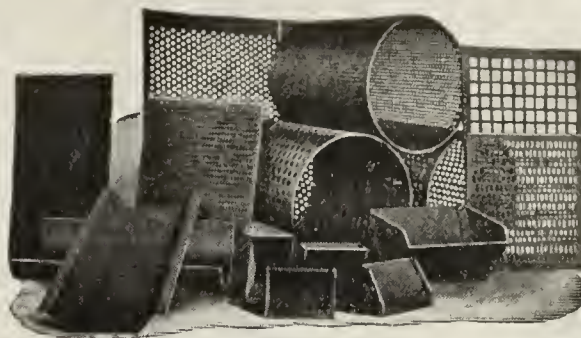
The National Fireproofing Co. has resumed partial operations at its Standard plant at Keasbey, N. J., following a shut-down of several months. It is planned to bring production gradually to normal as conditions warrant.

Brick Company Promotes Hollow Brick Walls

The Trent Brick Co., Trenton, N. J., manufacturer of common brick, is promoting the use of brick hollow walls for buildings in this district, similar to the construction used so success-

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STEEL TREADS that are almost indestructible.

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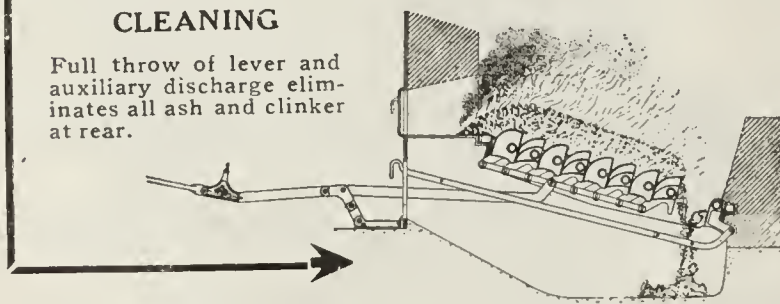
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fully in California and other sections. The company has constructed a specimen wall at its plant and is creating considerable interest among prospective builders. A number of improvements have been made at the plant for greater operating facility in connection with anticipated increased production. A. W. Goulding is treasurer.

Tile Company Incorporated

J. M. Wells, Inc., West Orange, N. J., has been organized under state laws with a capital of \$125,000 to manufacture building tile and affiliated products. The company is headed by Charles E. and Joseph M. Wells, 65 Walker Road, West Orange.

Making Coral-Cement Brick

A Brooklyn, N. Y., concern is placing on the market a new brick made of cement and "coquina," a coral shell used extensively in Florida. The brick is said to have a surface which is prettier than tapestry brick, formed by having the coral run thru the entire brick instead of using it on the surface only. It is claimed for the product that the shell surface resists moisture and will not spall or chip easily.

The company is making about 2,500 daily and has orders on hand for about 100,000 of the brick.

Increases Capital Stock

The Pyramid Brick Co., of Cleveland, Ohio, has increased its capital stock from \$300,000 to \$400,000.

New Clay Company in Ohio

The Carolina Clay Co., of East Liverpool, Ohio, has been incorporated for \$50,000 by C. V. Beatty, B. W. Hunsicker, Thomas H. Sant, Mary D. Smurthwaite and Robert Sant.

Will Make Brick and Sewer Pipe

The Unitile Co., of Uhrichsville, Ohio, of which A. V. Donahey, of New Philadelphia, Ohio, former state auditor, is president, reorganized at a meeting of directors and officers this week and is planning on entering the sewer pipe and brick manufacturing business. The capital stock of the company, officials said, will be raised to \$2,000,000.

Senator J. J. Rowe, of Cleveland, is vice-president, W. E. Knight, of Cleveland, auditor and secretary, and Walter Moore, of Uhrichsville, is manager. The plant which is operating at the present time, manufactures floor and mantel tile.

Hope to Resume in Near Future

Sales Manager White, of the brick department of the Hocking Valley Products Co., of Columbus, Ohio, which operates a face brick plant at Greendale, Ohio, reports conditions rather slow. This is especially noticeable during September, as August gave promise of a more active demand. The plant which suspended operations August 1 may be put into operation soon.

Ends Long Shut Down

Employing fifty men the Buckeye plant of the McLain Fire Brick Works, Wellsville, Ohio, recently resumed operations after a shut down of several months. The plant is operating a little less than normal. The Champion plant also of Wellsville, will not resume operations at present.

More Permits with Smaller Value

The Columbus (Ohio) Building Department for the month of August issued 405 permits for buildings to cost \$659,015, as compared with 249 permits and a valuation of \$1,646,400 in August of last year. For the first eight months of the year the department issued 3,341 permits having a valuation of \$6,824,235, as compared with 1,973 permits and a valuation of \$7,962,

545 in the corresponding period last year. During August the department issued permits for the construction of 85 dwellings, which is considerably more than was granted in August of last year.

Operating at Full Capacity

Emmet Howard, head of the Columbus (Ohio) Fire & Face Brick Co. and F. K. Day, treasurer and general manager of the South Webster Brick Co., which has general offices at Chillicothe, Ohio, visited the face brick plant at South Webster recently. The plant is in operation with a full force.

Activity Increases

Brick and tile plants are resuming operations in the New Philadelphia, Ohio, district. A combined brick and tile works is running five days a week after operating half time for several weeks. At another brick plant one of the two departments is working full time, while all employees of the other departments are working on repairs.

Labor Trouble Settled With Cut

The Hisylvania Coal Co., of Columbus, Ohio, which purchased two brick plants located at Glouster and Trimble, at both of which a strike of brick workers was in progress for several months, has settled with the strikers and both plants are in operation. According to the terms of the settlement the men are to receive a cut of five per cent.

Freight Rates Curtail Output

The Chamber of Commerce of Athens, Ohio, has filed a brief with the Ohio Utilities Commission relative to the recent investigation of freight rates on road building materials, which includes the rates of paving brick. The brief recites that the heavy increases in freight on pavers has reduced the production of that commodity in that section from 114,000,000 to 62,000,000. The first figure is the average production over a period of four years and shipments during the past year are represented by the last figure.

Architectural Display at Columbus

One of the features of the first annual conference of City Planners of Ohio, which will be held in Columbus, October 21 and 22, will be an architectural exposition, under the auspices of the Columbus Chapter of the American Institute of Architects. The exposition will be similar to architects' displays and architects in cities and towns surrounding Columbus have been asked to participate. Entertainment features will be looked after by John E. McCrehen, chairman of the Columbus City Planning Commission.

Showing Poor Judgment

The Ohio Grange at its annual meeting held in Columbus early in September made a strong protest against the use of brick and concrete in road construction. It was urged that macadam and gravel be used and thus a larger mileage could be constructed with the same appropriations. It was reported that a number of injunctions were secured in various parts of the state against the construction of high priced roads. These injunctions were secured by local granges.

Savings Increase at Columbus

Despite the fact that the past year was not the best as far as financial and industrial conditions are concerned, still there has been a net increase of \$4,574,106.82 in the assets of building and loan associations in Columbus, Ohio. This is for the fiscal year ending June 30 and the figures are contained in a recent report of John W. Prugh, state superintendent of building and loan associations.

The assets of the twenty-eight building and loan associations

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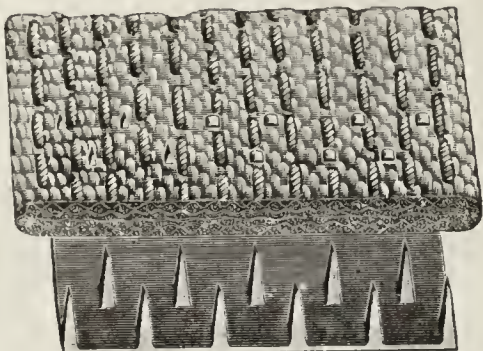
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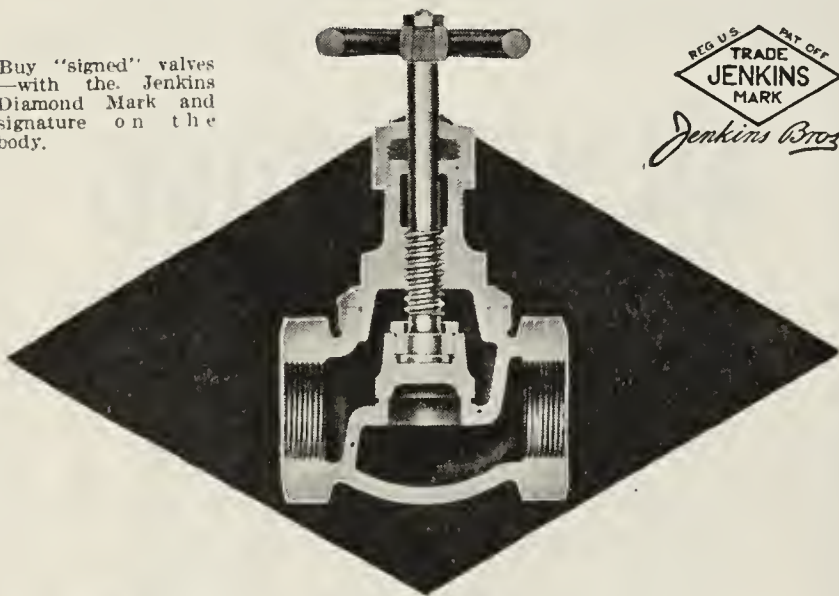


Fig. 75
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Jenkins Valves
SINCE 1864

in Franklin County were \$55,540,518, as compared with \$50,966,412 for June 30, 1920. The building and loan associations of Columbus made the best showing of any of the larger cities in the Buckeye State. The increase in the assets in the past ten years has been 300 per cent.

Drain Tile Demand Encouraging

There is quite an encouraging demand for drain tile in Ohio territory, according to W. P. West, of the Franklin Brick & Tile Co., of Columbus, who is on the special committee of the Ohio Drain Tile Association to collect facts with reference to conditions.

The demand in Ohio is earlier than usual and much better than manufacturers and jobbers had any right to expect when farming conditions are considered. The demand for drain tile in the East is likewise good.

Getting Orders by Going After Them

The old adage about everything coming to him who waits, is refuted by face brick factors in Cleveland, Ohio, on the ground that orders come to those who go after them. That is what the Hydraulic-Press Brick Co. has been doing lately, with the following good results: Six cars "Equitable Grays," Keith Theatre Building, Cleveland; four cars full range "Bokharas," Columbia Center School, Cuyahoga County; 15 cars "Bokharas," Ohio Insulator Co., Barberton, Ohio; 11 cars "Bokharas," Lafayette School addition; several cars cherry reds, for church at Pineville, Ky., and three cars reds to project at Wilmette, Ill.

"We consider it rather significant that Cleveland not only is taking quality material, but that other communities are coming here for their face brick," says Arthur S. Fielding, Cleveland manager. "There is no doubt but what the building trade wants low priced product, but when they inspect the quality brick, they take it and use it."

An Example to Be Followed

An answer to the question: "How do you find business?" appears to be aptly made by the Cleveland (Ohio) Builders Supply and Brick Co., in the well known rejoinder: "By going after it." That is what this brick manufacturing and material distributing firm is doing at this time. Particular attention has been given to the brick division. Display rooms have been enlarged and new panels of face and common brick installed. New devices, approaching closely to real daylight, have been put in.

Several service features have been added. For the benefit of those unable to make material selections during the usual hours of the day, the office hours at Leader-News Building headquarters have been extended, from seven o'clock in the morning until five in the afternoon, while telephone inquiries can be cared for as early as 6:30 in the morning and as late as eight o'clock in the evening. A new form of contract with material purchases has been arranged, so that the buyer is protected in the event of either a rise or fall in prices.

New Plant for Oklahoma

To the Kenyon Brick & Tile Co., Oklahoma City, capital \$125,000, a charter has been granted. Charter holders, A. W. Kenyon, William D. Kenyon, David Oliver, all of Oklahoma City.

Housing Corporation Active

The Commerce Housing Corporation, organized by the Pittsburgh Chamber of Commerce to relieve the housing situation in that city, has closed a contract for its fourth project, a group of 20 houses, it has been announced. The group consists of eight six-room and two seven-room houses in brick; six

six-room and two seven-room houses in stucco and two six-room houses in frame and shingle construction.

The corporation has been offered \$1,000,000 at six per cent. on first mortgages without extras or bonus except a nominal sum for establishing sound titles by a New York insurance company, it has been announced. Construction loans will be floated thru Pittsburgh banks and will consist of collateral trust notes, well secured, maturing in six or eight months and payable out of the proceeds of the first mortgage.

The corporation is not in a position to assist individual builders at present, according to the announcement, but may be in the near future. It is handling group projects and advises individual prospective home builders to form into groups.

Refractories Plant Starts Up

The Blandburg, Pa., plant of the Harbison-Walker Refractories Co. reopened August 8, after being closed down since April. At present the plant is operating at about fifty per cent. of capacity, but the management hopes to resume full operations in a short time.

Building Continues Despite Strike

In spite of the strike of the building trades in Pittsburgh, Pa., which employers say is losing strength with every week of its existence, there seems to be no letup in the filing of applications for permission to build. Last week the bureau of building inspection reported 104 applications for work to cost \$279,700, filed. Contractors say they have no difficulty in hiring sufficient men.

Has Fine Prospects for Steady Work

Excellent prospects for steady work combined with large orders for ladle and high class face brick have made it necessary for the Johnetta Brick Co., of Kittanning, Pa., to again begin work. About 200 men are back at work at the plant.

Offers Brick Made by State

William M. Lynch, superintendent of the State Hospital for the Criminal Insane at Fairview, Pa., has offered the brick made by inmates of the institution to the state for the new office building at \$7 a thousand. One million brick have been made from clay on the property of the institution. As the contract for the building has been awarded the matter will have to be taken up with the contractor.

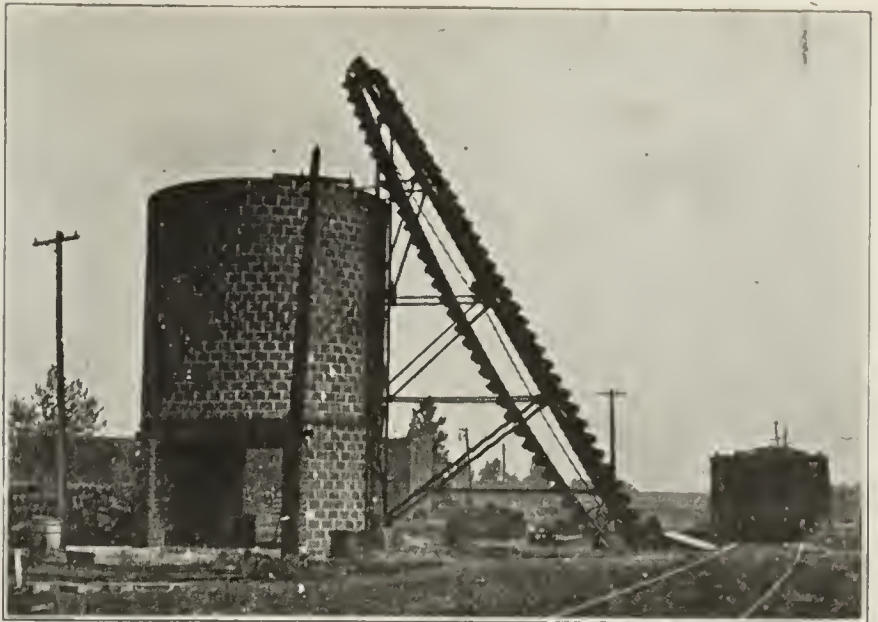
Superintendent Lynch also said that under the 12 foot strata of brick clay was an 11 foot deposit of fine potter's clay, which could be sold for the state. This matter will be taken up later by Superintendent T. W. Templeton with the Board of Public Grounds and Buildings.

Refractory Consolidation in Pennsylvania

The Queens Run Fire Brick Co., The North Bend Fire Brick Co. and the West Branch Fire Brick Co. of Lock Haven, Pa., consolidated on September 1 to form the Queens Run Refractories Co., Inc., of Lock Haven, Pa.

All of the consolidated plants have been in operation for years. The Queens Run Fire Brick Co. is the oldest of the three and was started in 1836. The officers of the new organization will remain the same as of the Queen's Run Fire Brick Co., except that Thomas C. Perkins of Hartford, Conn., will become treasurer of the organization. Wm. Sleicher, president; Harvey S. McLeod, vice-president; Henry Colvin, auditor; John F. Marshall, secretary, and Geo. H. Diack, general manager, comprise the other officers.

The new organization will continue to manufacture the well known brands of the consolidated companies and expect to be able to fill the requirements of every grade of fire brick in the Pennsylvania district.



55 Tons of Lump Coal Unloaded In 50 Minutes

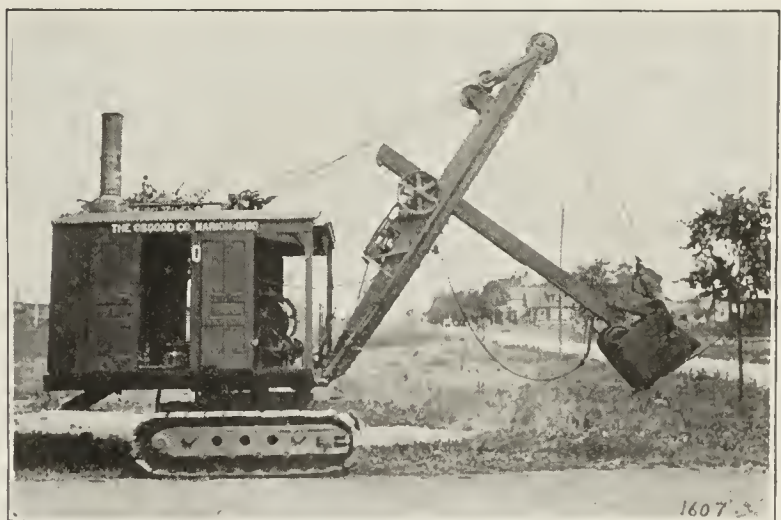
That is what a Sunbury Automatic Car Unloader does in filling a coal bin for the Krick-Tyndall Co., Manufacturers of Tile and Blocks, Decatur, Ind.

Think what it means to unload a car of coal, this day of car shortages and labor scarcity, in approximately one hour. It's real ECONOMY as well as co-operation in solving the great railroad difficulties.

The SUNBURY UNLOADERS are now used by hundreds of industrial concerns unloading coal, gravel, stone, sand, etc., paying for themselves in a short time in the saving of time and labor.

Tell us your requirements and we will send you complete information including prices and specifications.

THE SUNBURY MANUFACTURING CO.
Sunbury, Ohio



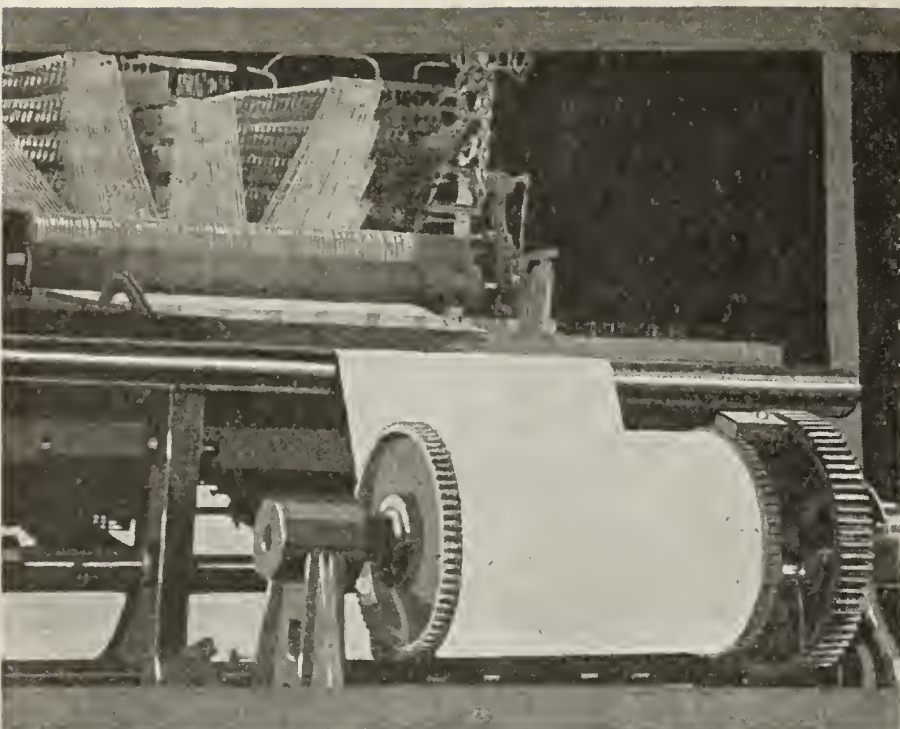
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and it will always be

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**Liberal Dimensions,
Sturdy Construction,
Ample Power,
Long Life.**

**Revolving and Railroad Type
Steam Shovels $\frac{3}{4}$ -6 cu. yds.**

The OSGOOD Company, Marion, Ohio U. S. A.



There is only one GANDY Belting

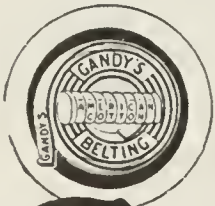
Winding the yarn from hundreds of creels to the single giant beam of the warp compressor is only one stage in the making of a Gandy stitched cotton duck belt. But careful workmanship and experienced supervision determine here, as in all the other processes, the high standard of Gandy quality.

There is only one Gandy Belting. It is the original stitched cotton duck belt—the world's standard since 1880. Its worth is testified to in records it has made—twenty to twenty-five years and longer on difficult drives and in conveyor installations where conditions of hardest wear prevail.

That is the kind of wear you want in the belting for brick plants. Insure genuine Gandy service in your plant by equipping with Gandy stitched cotton duck belting.

And be sure it's "Gandy." Look for the green edge, the Gandy name and the Gandy trade mark.

THE GANDY BELTING CO.



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732 W. PRATT ST. - BALTIMORE, MD.

NEW YORK: 36 WARREN STREET
CHICAGO: 549 WEST WASHINGTON STREET

GANDY

STITCHED COTTON DUCK
BELT

Reduce Brick Price \$1.50

Vancouver Island brick manufacturers, forming a branch of the Canadian Manufacturers' Association, have announced a cut of \$1.50 per thousand in the price of brick to the building trades.

Purchase Canadian Plant

The plant of the Northern Brick Co., Prince Albert, Sask., formerly owned by Bonas Bros. & Knox, has been purchased by Luke Anderson & Grant Co. Application for incorporation has been made under the name of the Excelsior Brick Co., Ltd.

Incorporates for \$200,000

Elmstead Brick & Tile Co., Ltd., Windsor, Ont., has been incorporated by W. G. McCrimmon and I. S. F. Walker, of Windsor, Ont.; W. G. Kelly, of Detroit, and others to manufacture brick, drain tile, terra cotta, etc. The capitalization is \$200,000.

Increases Capital to \$5,500,000

The Canada Gazette, of July 16, contains official notice of increase of capital of the National Brick Co., of Laprairie, Ltd., Dummons Building, Montreal, from \$2,000,000 to \$5,500,000.

Large Canadian Corporation

Windsor (Ont.) Clay Products Co., Ltd., has been granted letters patent with a capital stock of \$250,000, to carry on a business of manufacturers and dealers in brick, tile and other clay products. The provisional directors are J. C. Kennington, P. Osterhout, J. D. Chick and F. D. Davis.



Baker Brick & Tile Co., Victoria, B. C., has dissolved.

Canadians Organize Clay Concern

The Matheson Brick & Tile Co., Ltd., with head office at Hamilton, Ont., has been incorporated with a capital of \$40,000 by R. F. Illman, brick manufacturer of Hamilton; F. B. McKune and F. L. Wanger, of Hamilton, and W. P. Begley, of Matheson, to manufacture brick, terra cotta and drain tile.

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

New Manager for Hendrick's New York Office

B. G. Dann, who for the past four years has been connected with the Engineering Department of the Truscon Steel Co. in Youngstown, Ohio and New York City, has resigned to accept a position as manager of the New York Office, 30 Church St. of the Hendrick Mfg. Co., makers of perforated metal screens, elevator buckets, general sheet and light structural work, also light and heavy steel plate construction. Mr. Dann is a graduate of the Engineering Department of Lafayette College.

B. G. Shotten is the manager of the Pittsburgh office of this company, located in the Union Bank Bldg.

BRICK and CLAY RECORD

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The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

1921 REWARDED FIGHTERS BUT 1922
WILL REWARD THOSE WHO HAVE
REDUCED THEIR COSTS!

Are You Keeping Pace with Economic
Developments? Vital Points Every
Clay Manufacturer Should Give
His Immediate Attention

BUSINESS HAS BEEN SICK. There is nothing new in this statement and one dreads to be reminded of it. Many panaceas have been prescribed—many predictions have been made as to what will happen in the future and a view can be found to suit every opinion.

The editors of **Brick and Clay Record** have studied the situation with considerable thought and the more we delve into economics and history—both of which are believed to be mighty good guides—the more the following analysis seems to picture the true situation.

BUSINESS FOUNDATION AT FAULT

Sir Johnstone Wallace, chairman, British Federation of Iron, Steel and Metal Merchants, recently said:

"The great need of the business world today is a sound price; a price which bears direct relationship to economic fact. It is the discovery of that price which constitutes our biggest problem. How is it to be found?"

"The outstanding fact of the trade situation is its co-existing enigmatical and simple proportions. The situation is intensely involved yet singularly clear. This sounds paradoxical, but it is nevertheless the fact. We are so near to the war that we cannot get away from the conditions obtaining during the war period—they seem to have left their indelible mark upon our subconscious mind—yet we are so far away from the war that we attempt to banish it from our calculations, and are prone to plan today as we planned before the Armageddon. In short, we are attempting to build a peace-time organization on a war-time foundation.

"During the war things financial were comparatively easy; selling was simple; buying was straightforward (given scientific methods); production was reduced to actual necessities, and that which was produced could be gotten rid of to the customer who was waiting on the doorstep; manufacturing was

a matter of planning production; selling was a matter of offering goods.

* * *

STABILIZATION STILL IN PROCESS

"But what we, as business men, have to learn is that the reconstruction period is not over. We throw up our hands in horror at the state of business today, we look around and we can see trade apparently tottering. We are measuring up the standards of 1913 with a rule manufactured during the war period.

"We must return to the elemental factors of economics:

- "1. Land, including raw material.
- "2. Labor, both brain and manual.
- "3. Capital, with which is included plant, organization, and the covering of running expenses.

"In the price of the finished product each of these factors is represented. Between the minimum bed-rock reward, which these three elements of production demand, and the selling price there is a margin which increases or decreases according to the times and conditions. In prosperous times this margin is considerable; in hard times it is small; in times of intense depression it may cease to exist. Then the actual cost price constitutes the selling price!"

COMMODITIES PRICES RELATED

Under ordinary conditions, the value of a commodity has a definite relationship with respect to every other commodity. For instance, a thousand building brick are worth the same as three tons of coal. This is regulated by the law of supply and demand and by general values which take into consideration land, labor and capital. Altho the relationship between commodities fluctuates a little at times, it nearly always returns to a standard from which the variation is but slight.

There are two important factors, however, which cause a variation in commodity values. One is by the invention and introduction of new processes or machinery, or the finding of new sources of supplies; and the other is by an unusual occurrence such as a war, which destroys the relationship or balance, because it increases the demand and decreases the supply of certain materials. Prices rise in consequence.

Now, that the war is over, the balance or relation-

ship of supply and demand and of values has a difficult time readjusting itself. Every manufacturer is affected more or less, but the one who puts his house in order first, who curtails waste and reduces his costs so as to be able without sacrificing profits to lower prices if necessary in order to stimulate the demand for his product, will benefit far more and quicker than a manufacturer who waits for the rebound from some other manufacturer's improvements and reductions to benefit him.

THOSE WHO ACT WILL BENEFIT

The clay product manufacturer, for instance, who is waiting for his costs to be reduced by a reduction in the price of fuel and freight, will not show as large profits at the end of 1922 as the man who helps in readjustment in every way by trimming his costs today. The latter will also participate in every reduction in prices of fuel and transportation, repairs and supplies, enjoyed by the former.

History shows that every war has caused the price of commodities to increase and shortly after the end of the war to decrease to within but a few per cent. of their pre-war status. Leonard P. Ayres, vice-president of the Cleveland (Ohio) Trust Co. has quoted some interesting statistics on wholesale prices from 1810 to 1920. The figures were prepared by Dr. Ralph G. Hurlin, who is statistician of the Russell Sage Foundation in New York City. He has carried back the index number for wholesale prices in this country until we now have available the figures for a

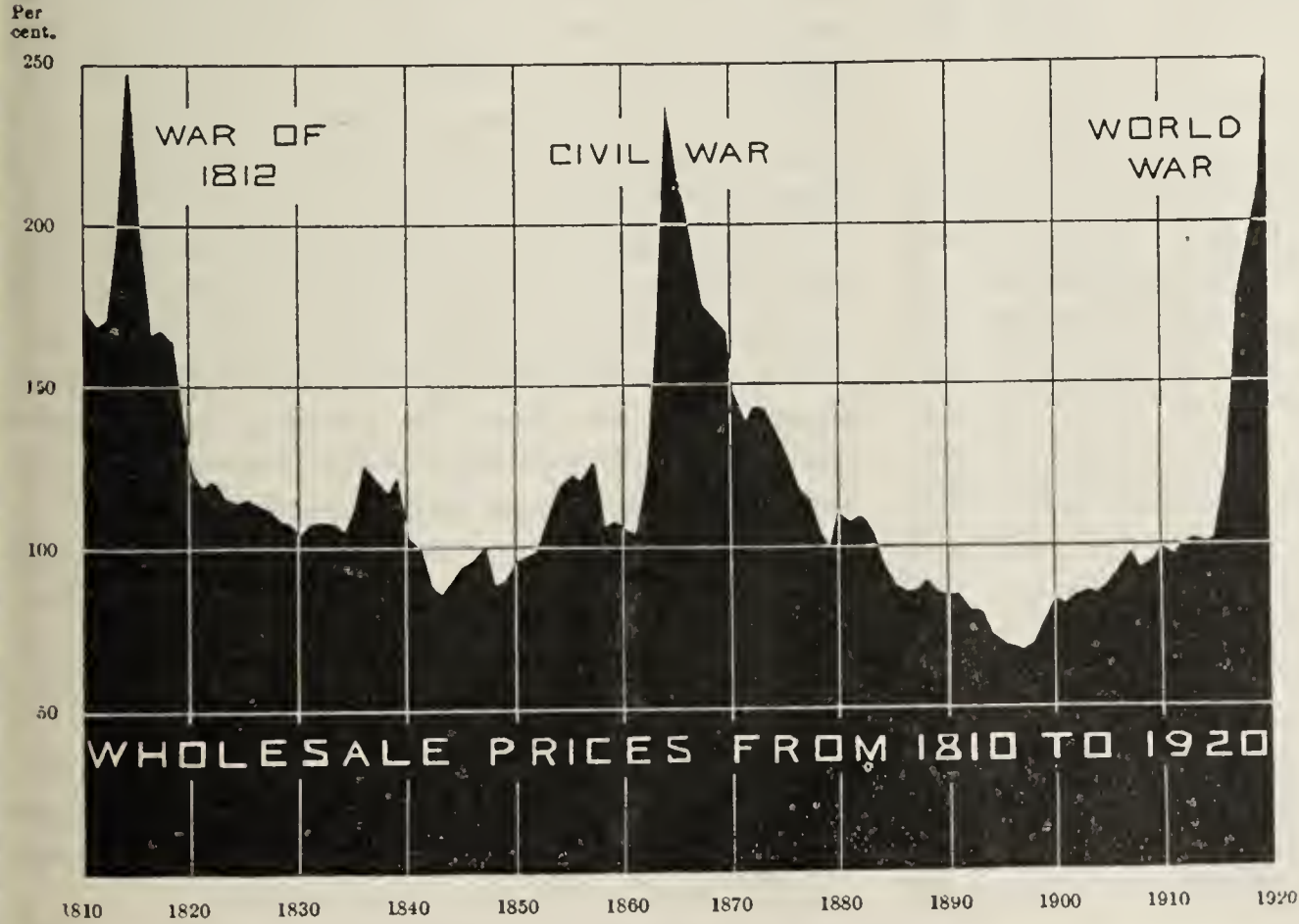
period of 110 years. An accompanying diagram shows how prices have varied during those eleven decades. It is constructed so as to show the prices of 1913 and 1914 as being equal to 100, and those of other years as being proportionately greater or less.

HISTORY OF PRICES

Mr. Ayres states: "The diagram shows that the recent great rise in prices is the third, of substantially the same amount, that this country has experienced. All three have come in times of great wars. The first took place during the war of 1812, which was in reality this country's participation in the Napoleonic wars. The second came during the Civil War, and this most recent one during the World War.

"If one will examine carefully the contour of the curve of prices during this period of 110 years he will find that it is a condensed version of the economic history of the country. Each important change in tariff and in national financial policy is reflected, together with the different periods of prosperity and depression, and the several wars.

"The most significant fact revealed by the diagram, however, is that each of the two previous great price increases has been followed by a 30-year period of irregularly falling prices, and a 20-year period of generally rising prices. At the present time prices are rapidly falling and it is most important for the business man to consider whether or not it is prob-



*Graphic Evidence
Based on Historical
Records That Prices
Will Be Lowered.
From This It Is
Apparent That It Is
Necessary to Reduce
Production Costs Now*

able that this is the beginning of a long term of falling prices and, if so, what this means for business.

"There is much evidence to indicate that the general trend of prices will be irregularly downward for a period of years to come, just as it was after the two earlier great increases. One reason why we may expect this lies in the very fact that prices are and have been high. Another is to be found in the world's decreasing production of gold. A third lies in the enormous losses of lives and property in the past few years, with the accompanying disorganization of the world's industrial producing power. A fourth is in the depreciated currencies of the world which the stronger nations will endeavor by every means in their power to stabilize and make more valuable.

"As these countries regain their industrial productivity they will, one by one, attempt to establish an adequate gold basis for their paper currencies. It is highly probable that several of them will find it impossible to re-establish their money at its old value as compared with our dollars, but even if they adopt some new ratio of worth they must somewhere obtain more gold as a basis for doing it.

"There is only one place from which they can get that gold and that is from this country, for we now possess a large part of the world's currency gold. They will try to secure it by sending to this country their commodities and selling them here, and each time that this happens on any large scale our own prices will tend to fall. For all these reasons it seems probable that we are entering on a long period of falling prices and it is well for us to consider what that means to us."

COMMODITY PRICES UNBALANCED

Prices on nearly all commodities have been reduced in the past year, some more than others and **it is the inequalities of the respective relationships between commodities that has caused the present general depression.** A new line-up must be made of the relationship between commodities and this must eventually be not unlike that of the previous standard.

The prices received for clay products have fallen a great deal in the last twelve months. In a few places the reduction has amounted to almost fifty per cent. Take the case of the manufacturer of common, face or fire brick, where the price has been cut as much as \$5 per M (many firms have cut two or three times that much). The manufacturer who makes 75,000 brick per day, shows a reduction of \$75,000 in his total annual sales if his plant operates only two hundred days in the year, and \$112,500 if it operates full

time for three hundred days in the year. That little \$5 multiplies into staggering sums by the end of the year, does it not? Similarly with hollow building tile, drain tile, sewer pipe, pottery or other clay products.

Of the \$112,500 approximately one-third or one-half has been absorbed by reductions in the cost of labor, fuel, repairs, supplies and so forth. It is a very conservative estimate to say that the manufacturer must stand at least \$50,000 of this loss.

Is he going to take this loss like a stoic with a smile and consider it is all in the game? Will he join the other "panic" and "hard times" talkers, or will he take inventory of his conditions and plan to save every penny of that \$50,000 that can be saved?

TYPICAL OPPORTUNITIES

Suppose this manufacturer knows that there are two or three places in his plant where he can reduce his cost per thousand. Possibly he has been digging his clay by hand—a power digging machine can often save a dollar per thousand with ease. Possibly his boiler or engine is overloaded, or his belts are too old to transmit full power—a little additional equipment may enable the machine to produce full capacity. The men are paid anyway and full production may enable the cost per thousand to be reduced another dollar.

Possibly, conditions may be like a recent case in Minnesota. A plant was equipped with two dry pans and being blessed with a wet shale it was necessary to use a preliminary, rotary dryer. Even then the shale gave trouble in grinding because the wet clay would clog up the screen plates and stop the grinding process. It was necessary to stop operations, clean the screen plates and start over again. This happened several times each day. The result was a limited production.

An expenditure of about \$20,000 on this plant eliminated the use of the preliminary dryer and two dry pans by the introduction of two steam heated pulverizers. Production was increased materially and no interruption or difficulty in grinding was thereafter experienced. The increased steady production and easier grinding lowered costs materially.

Another case that is very recent is that of a refractories concern which, without a great deal of expenditure, equipped a kiln with hand stokers and not only cut the coal consumption but also produced a higher percentage of number one ware.

Another plant threw out an old model brick machine and pug-mill and by installing new equipment with a larger pug-mill, not only increased its production but obtained a better class of ware.

A recent issue of **Brick and Clay Record** told of a hollow tile plant that installed a calculating machine and thereby easily displaced three girls and also simplified the keeping of cost records.

Another concern examined its distribution costs and found that by the planning of a proper campaign with appropriate literature and with the thoughtful routing of salesmen, better results could be accomplished.

WHY TAKE THESE LOSSES?

Nearly every organization, if it will examine every department of its plant with sufficient thoroughness, can easily reduce costs several dollars per thousand by the introduction of proper machinery or methods. We ask again, with these possibilities before him, is a clay manufacturer going to take his loss like a stoic with a smile and consider that it is all in the game?

Suppose that this mythical manufacturer wants to make these improvements and obtains bids from the manufacturers of the necessary equipment. He is staggered by a total estimated cost of \$100,000 and immediately drops the contemplated improvement because he considers that it is out of reason with a conservative estimated saving of \$2.50 per thousand. He never would be able to pay back that loan!

A competitor, however, who has identical conditions figures it out this way:

Interest and commission on \$100,000	
at 10 %	\$10,000
Depreciation and obsolescence on \$100,000	
at 15 % (high)	15,000
<hr/>	
Total, \$25,000	

He realizes that if the improvement will make a saving of more than \$25,000 over his present methods, the investment will be sound and approved by any banker. He figures a little further, therefore, $\$2.50 \times 75,000 \times 300 \text{ days} = \$56,250$.

He finds therefore that his improvements will pay interest, commission and depreciation charges amounting to twenty-five per cent. and allow him more than twenty-five per cent. in dividends in addition.

Which man will be on easy street first? What banker will refuse a loan on a basis of this kind? **There is no question about being able to afford improvements, it is a question of being able to afford to be without them.**

IMMEDIATE ACTION REQUIRED

Too many manufacturers look upon plant improvements as an expenditure. An expenditure in the true sense is an outlay of money which will not be returned. Plant improvement should not be put into that class. The executive branch of the business should consider itself in the role of a bank and any improvement to be made in a plant should be considered a loan to the operating department. The operating department should be required to return this loan by annual installments or allowances to depreciation and obsolescence accounts, so that the entire amount will have been returned before the equipment or improvements must be replaced or renewed. These annual charges should also include interest on the value of the improvement just the same as interest would be paid on a loan.

A good cost accounting system always makes these allowances before showing any profits. This fact is one of the many good benefits to be derived from a proper system. Plant improvements which cannot be considered a loan and which will not return a profit in addition to the interest, depreciation and obsolescence charges are in reality a true expenditure of money which will not be returned. We certainly wish to discourage an expenditure of money for equipment of this nature.

It is admitted that the spring of 1922 will see general business on the increase. But the public will demand lower prices. We must recognize economic facts and the clay products manufacturer must realize the necessity of lowering his costs so that he can lower his prices, if desirable, in order to be in line in commodity relationship. Man-capacity must be increased! There is need for action right now—this Fall and Winter.

1921 REWARDED FIGHTERS BUT 1922 WILL REWARD THOSE WHO HAVE REDUCED THEIR COSTS.

By All Means Read

the above editorial thoroly and study it; then write us immediately what your own opinion is. Our plans call for something of unusual interest for you in

Our Next Issue

CLAY PRODUCTS INDUSTRY ROWING NOT DRIFTING

*Close of War Marked Entrance of Clay Industry
Upon New Phase Which Will Prove Its Undoing or
Upbuilding Depending Upon How Situation is Met*

By Maurice B. Greenough

Secretary National Paving Brick Manufacturers Association

THE FEDERAL GOVERNMENT thru its scientific bureau of Mines and Standards, the scientists of the clay products industry thru the American Ceramic Society and the manufacturers of face brick, hollow building tile, common and vitrified paving brick thru a joint committee of their respective national associations, all have joined hands to seek by research to solve vital problems in heavy clay products production.

Step by step, in orderly progression, this joint clay products research program has been developed from an idea to an actuality. The scope of the studies has been defined; the functions of each of the several participating groups have been assigned; the financial support of the work has been assured; the administrative methods involved in the co-operation have been arranged. Today the program is in operation. And this occasion is a welcome opportunity to discuss publicly the nature of the arrangements effected. We believe that our experience will not prove without value to other industries as much in need of the benefits of the right kind of research as our own.

INDUSTRY CANNOT REMAIN STATIONARY

By undertaking this program, the heavy clay products industry is aligning itself with the progressive industries of the nation. It is almost trite to recall that there is no such condition status in industry as standing still. Either economic progress is made in production and distribution or loss of economic prestige is suffered.

As society increases in complexity there is bound to follow a growing sense of proprietorship on the part of the public over supplies of raw material. As time goes on the industry which is prodigal of our natural resources and which is not continually seeking and actually finding ways to improve the character of its product and to increase the efficiency of its production, will encounter two barriers to its economic progress—the second somewhat dependent upon the first—but either one of which will suffice to regulate such industries to the back-ground. These obstacles are:

OBSTACLES TO ALL INDUSTRY'S PROGRESS

First—The rising of production and distribution costs to so high a point that price becomes out-of-line with the service rendered by the product.

Second—Public prejudice toward consumers of raw materials who are not making an equitable return to the public in the service-value of goods manufactured, for the raw materials consumed.

Corollary to the choice of a future in industry two courses seem therefore to be open to manufacturers: Either to drift along from year to year allowing production and distribution costs to be determined by circumstance or to embark deliberately upon a systematic and scientific study of the manufacture of products with a view to controlling a future economic course of industries by the force of directed intelligence.

DRIFTING INDUSTRY ON DANGEROUS GROUND

An industry drifting is at the mercy of the economic conditions and its competitors who refuse to drift. An industry consciously bringing to its aid the chart and compass of practical science, backed by the determination to face facts and to abandon all prejudice, is on the road to entrenchment in a strong economic position.

Industrial research is the channel thru which the necessary information can be had if it can be obtained at all. Naturally the mere existence of a research program does not guarantee success. Research may be capitalized or abused. That it has more than once been mishandled may account for some prejudice against it; may account for the theoretical and visionary atmosphere thrown about it. But even this should be no warrant for refusing to grant to sound research its true place as a vital and energizing force in modern industry.

There are two distinct divisions of industrial research operations:

WHAT INDUSTRIAL RESEARCH MEANS

First—Research which has for its prime object the determination of ways by which existing productive facilities and processes may be rendered more fruitful. I shall call this kind of research "scientific refinement."

Second—Research which is intended to point the way to future improvements and developments in productive facilities and processes. I shall name this division of research "scientific prospecting."

We may be confident that the success or failure of any industrial research program will be measured by how well these major distinctions are kept in mind in making and administering research plans. To the industry which is embarking, or is considering embarking upon a research program, the first division has the quickest and strongest appeal.

Editor's Note—Read by Maurice B. Greenough, secretary, National Paving Brick Manufacturers' Association, before the American Ceramic Society in session during the National Chemical Exposition, New York City, September 16.

MONEY FOR RESEARCH MORE EASILY AVAILABLE

It is natural that this should be true. Industrial plants represent capital investment. The officers of constituent companies occupy positions of trusteeship to themselves as proprietors or others who have intrusted them with capital for the earning of income. There is, therefore, a natural attitude of conservatism which continually acts as a check upon the spending of money for those things which do not obviously increase the productive earnings of the company.

Today, however, few officers will decline to spend reasonable sums of money for research designed to make capital, already invested, more productive, provided they are convinced that the proposed research is thoroly sound and practical. In the natural order of things, research for refinement is first and there are few industries ready for scientific prospecting until the possibilities of the development of efficiency in existing plant and equipment are exhausted. The production of a few definite, tangible results whose application is useful and whose usefulness is apparent does more to invite the confidence of the average manufacturer in the value of applied science in industry than volumes of theoretical determinations quite sound from a scientific standpoint, but impractical of application.

CLAY PRODUCTS MADE LITTLE USE OF SCIENCE

It is but a step from scientific refinement to scientific prospecting if the refinement proves to be productive. But ignore the refinement and prospecting will be regarded as an illusive vision rather than a vital necessity.

The foregoing observations, altho general, are nevertheless not unrelated to the problems before us in heavy clay products research. Here we have an industry whose origins, insofar as they are known to us, date back to the beginnings of recorded history. Gradually the processes of producing these important materials of construction have developed with the growth of scientific knowledge; but the development has been slow. Compared with many industries we have made little use of science; what scientific applications have been made have largely flowed from individual initiative rather than from any organized and concerted action, bent upon solving specific problems.

HEAVY CLAY PRODUCTS CLASSED AS LOW GRADE

Heavy clay products (or perhaps we might as accurately identify them under the name of the burned clay construction materials) are known as low grade materials; the value of the material per unit of weight is low. The industry has been built upon:

- (1) Wide distribution of raw materials.
- (2) Low proportion of labor cost to total production cost.
- (3) Cheap fuel.
- (4) Low freight rates.

Under the foregoing conditions a great industry has been built up which has supplied construction materials of recognized merit for their respective uses, unequaled in service-value, and all at a price that has been consistently not in sufficient excess of that of substitute materials as to offer any insurmountable obstacles to the continued sale and distribution of the product.

Conceivably the heavy burned clay products industry closed one chapter of its existence with the late war and is now entering upon another phase, which will prove our undoing or upbuilding, depending upon how courageously we meet the new situation and adapt the industry to its requirements.

VALUE OF RAW CLAY SAME AS IN 1916

One alone of the four divisions of our economic foundation remains today substantially the same as its pre-war status.

Clay, of one variety or another for our production, is still generally distributed thruout the country. The value of this material, as raw material, with a few notable exceptions, has not greatly increased since 1916. And such small increases as have taken place constitute but a small proportion of the total cost and can readily be absorbed.

The two chief items of heavy clay products production costs, as we well know, are fuel and labor, speaking in the sense of labor as the cost of workmen on the plants and not referring to the labor absorbed by and represented in the cost of fuel. Labor costs are higher now than in 1916. They are not as high as they have been, but it is doubtful if for many years labor costs will recede to pre-war levels. We may therefore look to increased labor costs unless one of two things happen:

GREAT QUANTITIES OF COAL USED TO BURN CLAY

First—Increased production without increase in number of men employed in relation to tonnage.

Second—Less men being required to produce the same or additional tonnage by virtue of developments in processes.

Without further discussing these propositions, let us turn to the fuel situation. Great quantities of it are needed in a year. In the production of paving brick, for example, 1.87 tons of coal are used for power and burning for every 1,000 ten-pound pavers produced. Roughly, .4 of a ton of coal for one ton of output. Other heavy burned clay materials will vary from this figure, but the variation can be a wide one and we shall yet rank among the first half-dozen users of fuel in the country.

COAL COSTS BIG ITEM

Were there no other impelling motive for endeavoring to reduce the amount of coal required to burn our product than the saving in fuel expense (the largest single item of production cost) then the fact that fuel now costs something like three to four times its pre-war level, and the added necessity due to the obligation that rests upon all industry to be as sparing as possible in drafts upon our natural resources, would be ample justification for our purpose to find ways to economize in fuel consumption.

If we can find out how to burn equally or more acceptable ware, with less fuel, we shall have succeeded in solving a problem vital to the future economic stability of our industry and at the same time we shall have aligned ourselves with those who by practice rather than preachment, are most mindful of the best interests of the nation. The fact that we are attacking this problem places the industry in an enjoyable situation in the public mind.

LOW FREIGHT RATES VITAL TO CLAY INDUSTRY

In common with all American industries, the growth of the clay products industry has been built upon low freight rates. With freight rates at their present high level we are shouldered with an additional burden of distribution cost which cannot be considered otherwise than serious. It is earnestly to be hoped that some relief may be forthcoming and forthcoming soon.

But we have already pointed out that some costs, other than those of distribution, are high. And it so happens that we for ourselves have it in our power to find relief insofar as production costs are concerned. As between the alternative of awaiting the pleasure of the railroads to reduce freight rates on our material, or for the arrival of such general transportation conditions as will make possible a reduction in rates, there can be no doubt that we are doing the correct thing to solve for ourselves those problems whose solution

can be effected by ourselves rather than to rest our future upon circumstances.

SCOPE OF RESEARCH PROGRAM

Let us consider for a moment the scope of the joint clay products research program, and the role in which each participant is classed. In this respect, our program differs materially from the general run of such efforts. In the first place the public is represented and has an interest exercised thru the work that is being done in the Federal bureaus in Washington. Our program therefore demonstrates the principle of the buyer co-operating with the producer in the improvement of processes and the bringing about of more economical industrial operations. This is a practical manifestation of the public interest in the disposition of natural resources and the active representation of such public agencies as the Bureau of Mines and Standards can only be interpreted in a grateful spirit. Science is brought to our assistance thru the agency of these bureaus and again thru the American Ceramic Society, which in a sense is a contribution of the industry to itself. And finally the producers of the heavy clay products thru their joint committee have pro-

vided a part of the funds and the administrative facilities to represent their share in the solution of a great problem.

ALL FORCES ALIGNED TO AID IN RESEARCH

It is difficult to conceive a more perfect alignment of forces. No group having a natural interest in heavy clay products is unrepresented, unless we except such producers of other heavy clay products as are already at work upon similar problems, or have not as yet seen fit to share with the now active producers a portion of its present burden. It is to be hoped that these other divisions of the industry may soon align themselves with the work in progress.

The operations of the program are beginning with studies of existing equipment. We are determined to find out how to use present kiln types with greater efficiency. We are bent upon gaining this goal as quickly as possible. And we have at the front always the consideration of practicality which will promote the every-day usefulness of our studies. The work has been discussed from every angle. The preliminary stages are passed. It is now a problem of hard work. The harder all of us work at the job, the quicker the results will be available.



KILN *to* JOB BRICK SHIPMENTS NOW PREVAILING *in* GOTHAM BUILDING MARKET

CONDITIONS in certain sections of the eastern construction industry have so noticeably improved of late that dangers arising from possible over-extension are beginning to be sensed in some of the trades, says the Dow-Service daily building report of September 24.

Pell mell order taking, without special regard to prices or delivery promises, is rapidly giving place to more conservative salesmanship as some of the idle plant capacity has been safeguarded by enough new business to insure at least part-time operation until the building movement demands more out-turn of material and equipment.

COMMON BRICK STOCKS EXHAUSTED

There are some basic building commodities where plant operation is approaching maximum, as in the case of cement. In the common brick industry New England, New Jersey and New York demand is so great that "manufacturers are up to hot brick," an expression meaning there is no shed reserve, that market demand is actually calling for brick right out of the kiln.

Where architects and general contractors have found it difficult to induce old established, conservative firms to compete with more venturesome competitors on price or delivery promises, it has been due to the growing consciousness of winter manufacturing and transporting conditions at a time when the current quotations set a mark so low as to leave no margin to cover winter emergencies, such as losses incidental to possible strikes arising from wage readjustments, snow blockades, coal shortages at mill centers, etc., etc.

PRICE CONDITIONS NOT YET RIGHT

It is becoming generally recognized in the New York construction industry that price alone at the present time, at least, does not represent the sum total of benefit to the investing owner coincident with conditions of building material supply and present potential demand. Deliveries on old contracts made before the building material stampede of 1920 winter and spring are just now being finished on cer-

tain building materials altho materials upon which premiums were paid during the same period have been standing in finished buildings which have long been producing investments.

The recent change upward in certain basic building commodity price levels eloquently proclaims the fact that conditions are not considered right, by both manufacturers and dealers, to be stampeded into the winter construction era on margins so near to cost, as to allow no factor of safety in case of a protracted wage dispute, rail congestion, or fuel shortage necessitating extra long carrying costs for piled-up inventory, pending resumption of building operations.

WINTER EXPECTED TO BE ACTIVE

There is reason to believe that as a whole the forthcoming winter is to be an active one in basic building construction. There is not as bright an outlook for some of the finishing trades between now and the first of the year owing to the fact that actual construction work made such a late start. The finishing trades, however, may look for a rush period from December to early spring when the tax-exemption law applying to new habitation building construction, as it now exists, expires. Owners will be desirous of having their structures completed to avail themselves of the benefits the law will afford them.

INDUSTRIAL BUILDING TO GO AHEAD

Meantime men with keen business perspicacity sense the growing tendency of financiers to lighten some of the readjustment period burdens necessarily placed upon commerce since the signing of the armistice and are turning their attention simultaneously toward industrial expansion. Here the heavy constructors and equipment interests have their attention wedged. There is ample evidence deduced from this source to show that this type of construction is to regain its accustomed place in the construction field during the wane of the winter.

Price changes in the basic building material price list this week include a \$3 drop in the price of asphaltum mastic and

acid-proof asphaltum, and a slight shift in blue annealed sheets and wire lath prices are being quoted at a higher level than formerly. There is some widening of price range on crushed stone.

BRICK PRICE MAY GO HIGHER

Common brick, general good quality, sold in the general market at \$15 a thousand, wholesale last week, to which price, for delivered quotations, the cost of handling, haulage and ten per cent. must be added. There was more brick sold at \$16 than in previous weeks, mostly on specification, however. Some lower grade brick was sold under pressure at \$14.50 but there was not sufficient quantity of this kind of brick sold at that figure to make a market. The market is steadily edging toward a level higher than \$15. Portland cement at the new \$2.90 price brought no rush of orders, altho there are some dealers who have been feeling the market with a view to contracting for winter supply with the idea that this price marks the bottom level for some time to come, some say for a half year, at least.



Wisconsin's Clay Center

One hardly regards Wisconsin as a clay products state, yet there is a center in this commonwealth where the output is quite large. This point is Menomonie which is about 60 miles southeast of Minneapolis.

There are in this locality six different plants operated by three concerns. The Hydraulic Pressed Brick Co. operates two plants, The Exeelsior Brick Co. operates two and recently took over what was formerly the Wisconsin Red Pressed Brick Co. The Menomonie Brick Co. is another concern with a plant.

The clay found in this vicinity is a soft scaly shale of variable color.

At the Exeelsior Brick Co. plant, the bank is stripped of its over burden. Plows and scrapers drawn by horses win and gather the clay. The clay is worked on an incline towards a central station where it is dumped thru a platform into cars that run on tracks between this loading station and the plant.

In this manner, only two men with two scrapers are required



Clay Pit at the Wisconsin Red Pressed Brick Co. Plant
Where Clay is Obtained by Plow and Scraper Method.

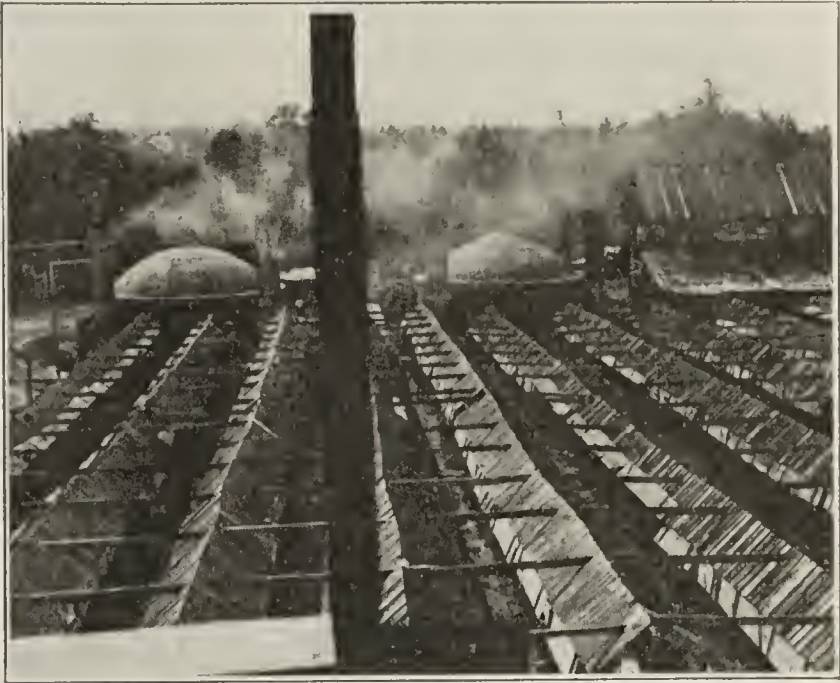
to win the clay for 55,000 brick daily. Since each brick weighs approximately 4½ pounds, 125 tons daily are gathered in this manner.

Many of the brick made in the Menomonie district are made according to the soft mud process and except in the case of the Hydraulic Pressed Brick Co. plant, the brick are dried in open or rack dryers.

The clay is dumped without grinding into a disintegrator, pugged and then fed into the soft mud brick machine. The pallets containing brick are conveyed on cable conveyors to the dryer racks where they are lifted by one man and placed in a

proper position. In this way, very little labor is required and the brick can be made very economically.

At the Wisconsin Red Pressed Brick Co. plant a stiff-mud machine has been added, and a few brick turned out. However, full equipment has not been provided for, but a crusher and cutter will soon be added. It is expected then to make a line of rough texture stiff mud face brick.



Open Air Drying Racks at the Wisconsin Red Pressed Brick Co. Plant. Note Method of Bracing.

In most cases, the brick are burned in up-draft kilns, altho a few down-draft kilns are in use. At one plant, it requires 12 days' burning time, six of which are spent in water-smoking. Three kinds of coal are used for burning in this plant, including Youghiogeny, Elkhorn, and southern Illinois coal. As much as \$10 is paid for this fuel, \$8 at the docks, and \$2 freight rate. The brick at these plants are shipped to Minnesota, Wisconsin, Michigan, the Dakotas, and Canada.

At the present time all of these plants are operating at part capacity. However, due to their seasonal character they will soon shut down for the winter months.



Gives Reasons for Higher Rates on Brick

Extraordinarily high investment and operating costs in large city terminals are the chief reasons for the high freight rates on brick, stone and gravel, says C. F. Loweth, chief engineer, Chicago, Milwaukee & St. Paul Railway, in a letter to the "Engineering News-Record."

Mr. Loweth contends that brick for building construction in the larger cities thruout the country are handled by rail but comparatively short distances from brick yards to city delivery tracks, perhaps five to ten miles, less frequently more, and in some cases from brick yards adjoining or inside the city limits. Mr. Loweth says:

"High freight rates for this and similar commodities are justified by the fact that this traffic moves but short distances, and is handled over tracks and facilities in large, congested cities, making the cost to handle enormously high. The cost of handling freight in the busy and congested terminals of large cities is very great, many times more than for an equal distance in the country, and doubtless in many cases it costs as much time and money to handle a car one mile within the limits of a city railroad terminal as would be required to move it over an entire operating division. . . . Should not freight rates for commodities moved short distances, requiring the use of expensive facilities and difficult and costly transportation service, bear some relation to the cost of the investment necessary for making the transportation possible?"

BUILDS FARM *to* DEMONSTRATE VALUE *of* TILE

Adel Clay Products Co. Gives Farmer Practical Aid in Building Problems—Operates Demonstration Farm with All Hollow Tile Buildings

By F. L. Clark

DRIVE ALONG the country roads of Iowa this summer, any or all of them between the Mississippi River on the east and the Missouri on the west. Gaze out over the landscape checkered with squares of yellow stubble fields, emerald corn lands, and olive meadows spotted with cattle, hogs and sheep and before you know it, you'll be saying as thousands of others have said: "There is no place else in the world like Iowa."

Without intending a bit of offense to the other splendid states of the Corn Belt, the truthful chronicler will have to admit that the Creator when he handed over to Iowa more than ninety per cent. tillable land and added for good measure an annual rainfall of thirty-six inches and an abundance of sunshine, did just a little better by her than he did by the rest of the agricultural states.

IOWA FARMER HAS PROSPERED

Maybe the Iowa farmer has prospered not so much because he has worked harder as because he has been blessed with such a fine inheritance. However, that may be—it is certain he has prospered and marvellously. "Even the tomb stones seem to be bigger in Iowa than anywhere else," a Nebraskan said the other day. Everybody knows Iowa is the state with the most automobiles per capita and the most hogs per square mile. But a better sign yet, is that with all the bed-rock prices for farm produce, and with all the general business depression, the Iowa farmer is going right along building this summer and even more than ever before. He may talk about hard times, but he is talking it while putting up a bath-roomed, hard-floored residence, or raising a mammoth barn or building a hog mansion or erecting a silo.

What is he building them with?

The houses and barns of lumber with hollow tile basements—hog stables, poultry houses, milk houses, garages, machine sheds and silos of hollow tile. Of course, there are exceptions. I have seen in a half day's drive in northeastern Iowa two farm residences being constructed of brick and one all of hollow tile. I have seen some

foundations being made of concrete or concretile and a few hog stables and poultry houses of lumber. But on the whole, aside from residences and barns, the great farm building material of Iowa in the year 1921 is hollow tile.

HOLLOW TILE POPULAR IN IOWA

In fact, it has been for several years. The Iowa farm nowadays which hasn't at least a milk house of tile or some building with a hollow tile foundation is unusual. The Iowa farmers like hollow tile for their out buildings, and the great amount of the material they are using this year simply proves that the more they are using it the more they want to use it.

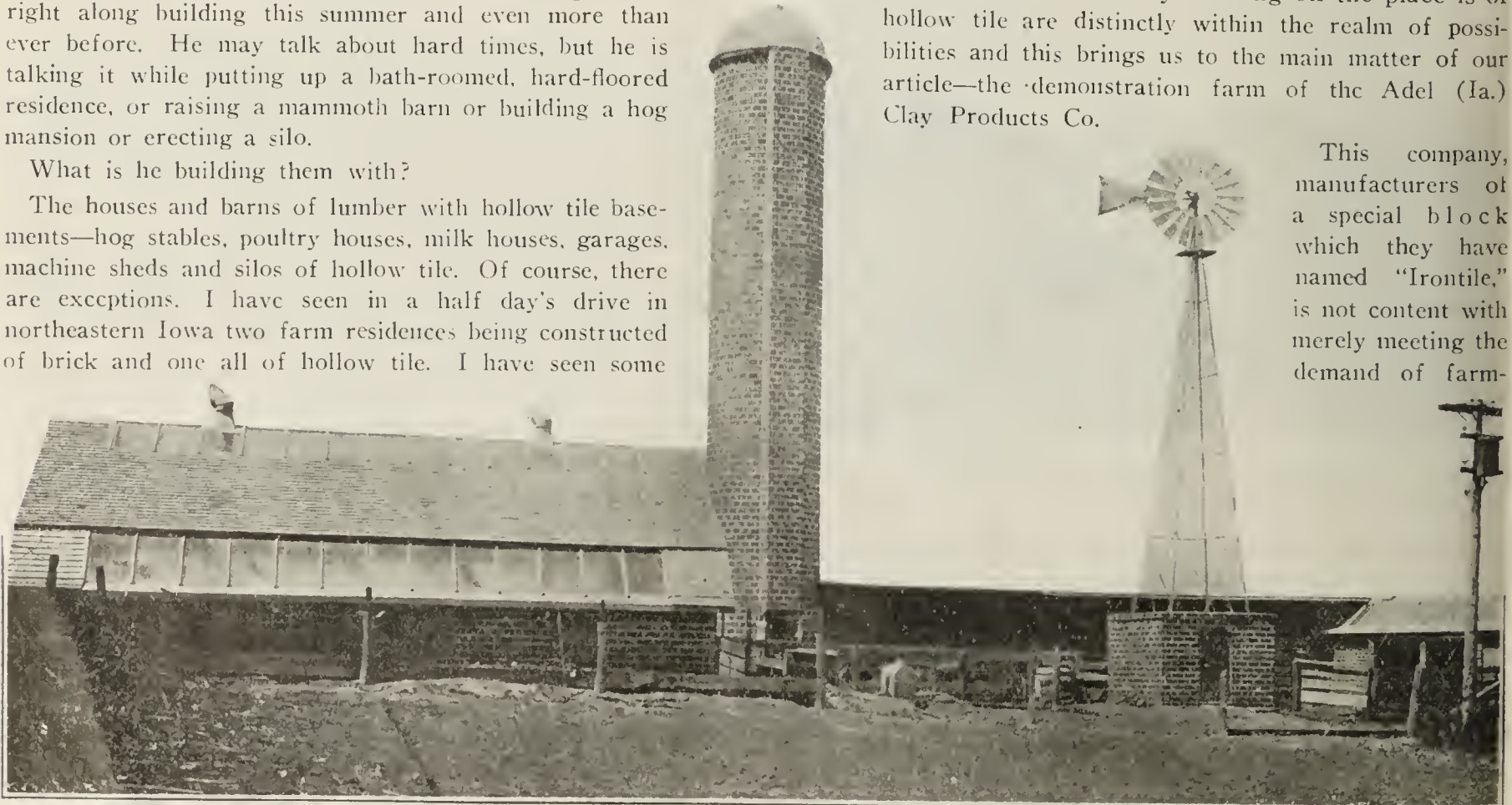
"I see you are making most of your new buildings of hollow tile. Why do you prefer it?" I have said this to a good many farmers lately. Their answers sum up this way:

"It's permanent. Easy to build with. Don't have to paint the buildings. No expense to keep them up. They are warmer in winter and dryer. They are fireproof. They look neat and attractive, are easier to keep clean and are more economical."

MAKE EVERY KIND OF FARM BUILDING

Granting that Iowa leads and not follows in farm advancement, truly the clay products fraternity may look joyfully into a future that promises an immense farm demand for hollow tile. Farms where every building on the place is of hollow tile are distinctly within the realm of possibilities and this brings us to the main matter of our article—the demonstration farm of the Adel (Ia.) Clay Products Co.

This company, manufacturers of a special block which they have named "Irontile," is not content with merely meeting the demand of farm-



A Good General View of the Principal Farm Buildings. All Built of Hollow Tile. From Left to Right Is the Hog House, Silo, Shelter Fence, Well, and Cattle Shed.

ers for hollow tile block for their various structures. They are anticipating their demands and boosting for better farming at the same time by offering the farmer all kinds of buildings which embody the latest thought in agricultural science in architecture no less than in the choice of material out of which they are built. Their list of farm buildings comprise barns, granaries, machinery sheds, hog houses, chicken houses, smoke houses, garages, shop buildings, water supply tanks, seed corn houses, manure pits, barnyard shelters, fences, farm houses, ice houses, milk houses, wells and cisterns, vegetable cellars and cattle sheds.

Ordinarily the farmer in planning his buildings is dependent upon the local lumber dealer who usually carries only the standard-sized tile, for he prefers to sell lumber as he thinks he makes a greater profit out of it.

Having purchased his tile from such a local lumber dealer, the farmer next must depend upon the local contractor who as often as not is little versed in the art of tile building construction and woefully ignorant of modern farm architecture.

FARMER NEEDS HELP IN HIS BUILDING PROBLEMS

The agricultural colleges are doing what they can to aid the farmer in his building problems, but the need for such assistance is far too great for them to meet it alone. They need, and the farmers need, the cooperation of the building material men and what could be better business for the clay products profession than to give such cooperation?

The success of the Adel company which is doing this very thing would seem to be no uncertain answer to the question.

The company has employed at its plant two architects who are constantly on the job working out best types of farm buildings. Once a year the company holds a school for contractors and dealers and shows them how to properly use tile in construction. Standard tile for foundations are being supplied and all the accessories such as jambs, corner block, and different sizes of units to break joints to make complete buildings. Then besides the Adel Clay Products Co. is selling entire buildings, tile, glass, metal frames and all complete, ready to set up.

OPERATES DEMONSTRATION FARM

The company's dealer or contractors go direct to the

farmers with plans and estimates. They demonstrate not only the advantages of block as material for farm buildings, but the advantages of the particular kind of structures which they are making. When they sell the farmers they have sold them not just so many tile, but the materials for a whole building or several buildings. When the order arrives the farmer takes home his barn or hog stable with windows and all the rest, and it is "the latest thing" in barn or hog stable.

Adjoining the factories at Adel the company operates a demonstration farm of 120 acres. A set of the company's hollow tile farm buildings are on the place in actual use, and by the hogs and cattle raised, the value of the kind of housing designed and sold is demonstrated.

"The cost of such a set is no more," says H. R. Straight, secretary of the Adel Clay Products Co., "than that of many other materials which are not permanent."

TILE HOG HOUSE PERMANENT, HEALTHY

The hog house shown in the picture stands with its north end about seventy-five feet east of the silo. It combines permanence with roof ventilation and four continuous roof windows running nearly the full length of the building. The necessity of floods of sunshine in housing hogs and other stock has come to be appreciated, and with such a building the sunshine is permitted to enter to keep the hogs comfortable and healthy in the fall, winter and spring.

The silo is twelve by seventy feet with a hollow tile chute and roof as well as foundation. Mr. Straight believes this is the most slender silo in the world, and says the advantage of height in silo construction has been fully demonstrated. The tall silo is the most economical for it holds the most. The one on the demonstration farm has a capacity of 400 tons. It is built of thoroly vitrified tile of 4x8x12 units, making the walls four inches in thickness. Mr. Straight says the silo is strong enough so that a supply tank of 500 barrels could be placed on top with the windmill on top of it with a factor of safety of nearly 30.

The shelter fence on the demonstration farm is a five-inch wall made of 4x5x12 "Irontile." It is built with a slight curve to stiffen the construction and is reinforced in the mortar at each course. A roof, as the photographs show, projects over the feed lot about six feet. This throws the



A corner of the Feed Lot at the Adel Clay Products Co.'s Demonstration Farm, showing the Hollow Tile Shelter Fence, Cattle Shed and Watering Tank.

snow and wind almost entirely across the feed lot, sheltering the stock very well in stormy weather and in winter.

A WATER TANK OF HOLLOW TILE

Within the feed lot is a hollow tile water tank and pump house. The pump house is of 4x5x12 "Irontile" giving it a five-inch wall. The windmill as the picture shows is on top of it. Just west of the pump house the water tank affords an opportunity for the stock in the feed lot to drink at all times. The tank is eminently satisfactory, and shows the thoroughness of the service the company is providing farmers. There is no problem greater on the farm than that of pro-



Close View of the Hog House and Monstrous 70 Foot Silo. The Silo is 75 Feet from the Hog House, So Some Idea of the Size Can Be Gained.

viding stock water of comfortable drinking temperature during cold weather. It is a vital necessity for best results with cattle and hogs.

There are various kinds of tank heaters on the market, but they are expensive to operate and require much attention. With hollow tile as water tank building material the farmer may solve his winter watering problem with a minimum of labor and cost. This is demonstrated on the Adel company's farm. The tank there is made with a double wall and a two-inch air space between. The walls are each four inches thick and run to the bottom of the foundation which is about three feet below the ground level. By this arrangement any condensation that may occur or any possible leakage of the inside wall can be taken care of as it goes into the ground at the bottom of the tank foundation where the ground never freezes. The tank has a reinforced hollow tile and concrete cover over it with three openings for the cattle to drink from. The openings are left uncovered except during extremely cold weather. At such times they are uncovered only when the cattle drink.

WATER IN TILE TANK DOES NOT FREEZE

No ice, says Mr. Straight, has ever been found in the tank except a thin coat over the top and around the openings for a short distance each way.

The cattle shed which stands at the end of the feed lot with its big open doors inviting the cattle to seek protection whenever they desire is built on the same lines as the

hog stable, with ventilators in the roof and continuous roof windows of hail proof glass. The walls are of vitrified "Irontile." Units of 5x8x12 are used, making a wall of eight-inch thickness. The material has a rough face, giving it the appearance of the best grade of face brick. This is another instance of the Adel Clay Products Co.'s well-thought-out method of bringing the farmer for good and all into the clay products fold. The hollow tile buildings the company is selling are made to put up a neat attractive appearance. While trying to make them the best to suit farm needs, the concern is equally interested in making the farm building look well, too.

The progressive farmer nowadays takes great pride in the looks of his farm buildings. If he finds hollow tile makes a neater, better-looking farm building than any other material, he is already half persuaded.

* * *

Employment in Clay Industry Increases

The Industrial Employment Survey Bulletin of September, 1921, shows encouraging figures for the clay products industry. The number of employes in the stone, clay and glass products industry increased 5.9 per cent. in the month of August over the previous month. Only two other industries exceeded this gain, that of food and kindred products which showed 7.6 per cent. and liquor and beverages which gained 8.4 per cent. Other industries listed in the bulletin show increases or decreases for August over July as follows:

Textiles, increase 1.07 per cent.; iron and steel, increase 2.2 per cent.; lumber, decrease 2.8 per cent.; leather, increase 4.4 per cent.; paper and printing, decrease 1.4 per cent.; chemicals, decrease .9 per cent.; metal other than iron and steel, increase 5.4 per cent.; tobacco, increase 4 per cent.; vehicles for land transportation, decrease 3.06 per cent.; railroad repair shops, increase 5.7 per cent.; miscellaneous decrease 2.4 per cent.

* * *

Observe National Fire Prevention Day

At the request of President Harding, Fire Prevention Day will be observed thruout the country on October 10. This date was named in commemoration of the Chicago fire. The fire occurred on October 9 but that date falls on Sunday so the day following was named for the observance.

The President has issued a proclamation addressed to the governors of the various states of the country asking that National Fire Prevention Day be observed. In the proclamation some startling figures regarding the waste and loss of life occasioned annually by fire are brought out.

"The annual loss of life," the President says, "is estimated at 15,000 human beings, most of them women and children."

"While the world begs for American products, our fire losses increased in 1920 to \$500,000,000, and in the five years previous, totaled \$1,416,875,000—buildings, foodstuffs, and other created wealth needlessly wiped out."

The President has urged the governors of the states "to request the citizens of their states to plan for the day, thru pulpit, press and forum, such instructive and educational exercises as shall impress the public mind with the threatened economic disaster of our unnecessary fire waste."

"Fire is a danger that never sleeps," he says, "and it is only by doing our duty as citizens, individually and collectively, that we may conserve the country's natural and created resources."

\$500,000,000 and 15,000 lives! What an awful and terrifying monument to our carelessness and superficiality.

BRICK DUST VERSUS GOLD DUST

Interesting Discussion of How Proper Use of Cost Figures Can Increase Profits

By G. W. Greenwood

Treasurer, United Refractories Co., Uniontown, Pa.

THERE WAS AN IMPORTANT ARTICLE on "Controlling Efficiency in the Clay Plant" in the August 9 issue of *Brick and Clay Record*. It is the writer's belief that the calculations given in the article would be more forceful if carried out in dollars and cents instead of being left in the form of percentages.

Consider the third line in the tabulation accompanying the article which is reprinted for easy reference, covering "Manufacturing." The data there given may be set down thus:

	Normal	Actual	Efficiency
Production	1,500	701	46.73
Hours Worked	25,740	12,868	49.99
Hours per Unit.....	17.16	18.35	93.51
Labor Cost		\$ 7,600.23	
Labor Cost per Hour.....		.59	
Total Cost		18,269.94	
Total Cost per Hour.....		1.42	
Total Cost per Unit.....		26.06	
Failures		483.93	

Would it not be well to work out and to include a normal cost per unit and per hour, so that one could tell what the total cost should be, normally, and thus determine how much of the total cost of \$18,269.94 represents a deficit? Assuming that the 701 units manufactured were no more difficult than the 1,500 shown under the normal heading,

then the operating department would presumably be responsible for the fact that they consumed more than an hour longer per unit than normal. This naturally would add to the expense, and we might reason as follows: If 1,500 units should have taken 25,740 hours, then 701 units should have taken only 12,029 hours. This is a loss of 839 hours, and at the rate of 59 cents per hour, this would amount to nearly \$500.

ANALYZING THE COST FIGURES

We are here assuming that the labor cost of \$7,600.23 is wholly productive labor, and does not include any of the labor cost during the 12,872 lost hours. For if this item of \$7,600.23 represents the total labor cost, productive and non-productive, then the loss is far more than \$500. But when we turn our attention to the total cost of \$18,269.94, we encounter a much more interesting problem.

Assuming that the operating department should have produced the 701 units in 12,029 hours, and is responsible for the labor cost for the additional 839 hours taken, let us inquire as to why there were only 701 units manufactured. Quite possibly there were as many produced as the sales department could place orders for, and the management wisely concluded not to make up additional stock in the face of a falling market. In this case, the total cost will contain a large item for which the operating department is in no way responsible. How much of this \$18,269.94 was incurred during the 12,868 hours the plant was operating,

FACTORY EFFICIENCY REPORT																
				Cols. 2 & 3		Cols. 3 & 5			Cols. 7 & 8		Cols. 1 & 10	Cols. 7 & 10	Cols. 3 & 7	Cols. 1 & 2	Cols. 3 & 10	Cols. 14 & 15
DEPARTMENTS	NORMAL PRODUCTION IN TONS OR M.	NORMAL HOURS	HOURS WORKED	PER CENT TO NORMAL	COST OF LABOR	AVE. PER HOUR	TOTAL DEPT. COST	FAILURES	PER CENT. TO COST	PRODUCTION IN TONS OR M.	PER CENT TO NORMAL	COST PER UNIT	COST PER HOUR	NORMAL HRS. PER UNIT	WORKED HRS. PER UNIT	PER CENT EFFICIENCY
CLAY MINING	1500	8,008	5,352	66.83	5,097.37	.95	6,889.78			939	62.60	7.35	1.29	5.34	5.70	93.69
PREPARATION	1500	9,855	6,967	71.12	4,288.46	.62	8,982.96			701	46.73	7.98	1.31	6.43	9.79	85.68
MANUFACTURING	1500	25,740	12,868	49.99	7,600.23	.59	18,269.94	483.93	2.85	701	46.73	26.06	1.42	17.16	18.35	93.51
SETTING	1500	12,870	6247	48.54	4,478.52	.73	16,108.65	65.00	0.41	952	63.46	16.91	2.58	8.58	6.56	130.79
BURNING	1500	13,937	5,974	42.15	3,312.88	.56	6,153.80	79.68	1.29	712	47.48	8.63	1.05	9.30	8.25	112.60
SHIPPING	1500	5,360	3,273	61.06	1,658.51	.50	8,531.10			815	53.33	10.46	2.60	3.57	4.00	89.25
AVERAGES OR TOTALS	1500	75,570	40,481	52.57	26,512.77	.655	64,936.23	828.81	0.97	803	50.41	77.38	10.25	50.38	52.65	95.69
COLUMNS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Factory Efficiency Report, Showing in Condensed Form the Operation of Every Department in Detail.

and how much of it was incurred during the 12,872 hours it was idle? For when a plant is losing time, it is also losing money; and a cost system which shows the loss in money due to a loss in time is a more effective and profitable system than is one which combines the two.

ANALYTICAL PROCEDURE

For this reason, the writer feels that this total cost should be divided into two distinct terms. Also, unless the labor cost represents productive labor only, it should also be divided. Then, having determined the cost of producing the 701 units manufactured, this cost is discussed with the operating superintendent. And having determined the cost of not producing the remaining 799 units this cost is discussed with whoever is responsible for the shut-down.

The following example will better illustrate this method, the figures used being as simple as possible to avoid computations which might detract from the argument: Suppose eight hours is taken as the daily unit, 56 hours constituting a week, and 48 hours constituting a full week's work without overtime or Sunday work. Now it is not advisable to base calculations upon a full time schedule, so let us assume that the plant should run 28 hours each week. Then each working hour will have to carry also one idle hour. Assume that the output per hour should be 1,500, making a normal weekly output of 42,000. Assume that for every working hour the labor cost is \$12, and that for every idle hour the labor cost is \$1.20. Assume also that the normal cost of supplies, raw material, fuel, etc., is \$10

per thousand manufactured, since these items depend upon the amount made, rather than on the time run.

FOUR GROUPS ENTER INTO NORMAL COST

Then there is the overhead, which is measured principally by the clock, such as insurance, taxes, interest (if this be an item of cost), salaries, etc. Assume this as \$84 per week. Thus we have several elements entering into the normal cost per unit; one group measured by the amount produced another by the hours worked, another by the hours idle, and still another group measured by the clock. A normal week, which serves, like the meridian at Greenwich, merely as a base from which measurements are to be taken, is as follows:

	Normal Amount	Normal Rate Per Unit
Working Hours Per Week.....	28	
Idle Hours Per Week.....	28	
Output Per Week.....	42,000	
Supplies	\$420.00	\$10.00
Productive Labor:		
28 hours at \$12.00.....	336.00	8.00
Unproductive Labor:		
28 hours at \$1.20.....	33.60	.80
Overhead Per Week.....	84.00	2.00
Total	\$873.60	\$20.80

(Continued on following page)

BRICK OUTLASTS COMPETITORS on TEST ROAD

THE EXPERIMENTAL ROAD, just south of the city limits, of Columbus, Ohio, built in 1912 by the State Highway Department, in an effort to determine the comparative value and length of service of different types of paving, is again in the limelight. Since the road has been built little or no account has been taken of it, until the recent agitation aroused by the destruction of state and county roads by tractors.

The recent investigation shows that only two of the original thirty-one sections of paving have retained their identity. They are the brick and asphalt block sections, which have not been repaired in the nine years they have been in service, in spite of the unusually severe treatment they withstood during the days when Camp Sherman necessitated much heavy truck travel between here and Chillicothe. Each of the other fifteen types of paving, including the macadam and petrifalt, have had extensive repairs and the macadam have been resurfaced each year since 1914 and in 1917 it was necessary to rebuild all of the macadam sections.

CEMENT SHOWS CONSIDERABLE WEAR

The cement sections have not needed the extensive repairs that have been given the macadam, but practically every cement block has the contraction and expansion cracks. Considerable wear is shown by the appearance of the pebbles used in the cement.

The cost to the state for repairs on the macadam and petrifalt types, each year would be equivalent to \$1,500 a mile, and the repairs in 1917 would have amounted to more than \$6,000 on the mile basis, while the asphalt block and brick type are in as perfect condition as when they were laid. As a means of testing the different types and makes of paving brick, as well as the fillers which give best service when used with brick, fifteen different brick sections were

laid, with one of asphalt block. The heavy trucks and tractors have not left a dent or crack in the surface of any of these brick sections. All of the macadam and petrifalt sections have been resurfaced so many times that their original types cannot be detected, and the records at the Highway Commissioner's office do not hold a complete history of the different types of resurfacing used in these sections, nor the cost of upkeep for a section.

OHIO TO SPEND \$30,000,000 FOR PAVING

State highway officials are being advised of the final results of the investigation, in view of the fact that the road building program for the state of Ohio is upwards of \$30,000,000 this year, an enormous percentage of which must be spent in repairing and resurfacing roads of the softer types, already built, and are being asked to recommend roads of more permanent and durable types.

James R. Marker, former State Highway Commissioner, at present chief engineer and secretary of the Ohio Paving Brick Manufacturers' Association, under whose direction the state experimental road was built, has kept closely in touch with the repair work which has been necessary on the road and he points out that the South High Street city paving which was laid while he was commissioner in 1915, is still in perfect condition, while it has been subjected to the same abuse as the state road, which is constantly being repaired.

"It is impossible to keep tractors and heavy trucks off of the road," said Mr. Marker, "and the building situation will never be much better until the tax payers realize that service value is the only thing that counts in the building of roads."

The holes dug by tractors in about half a mile of road on the Winchester pike recently started an investigation in road building.

Let us now consider how to compare actual conditions with the normal schedule thus set up, and how to measure the differences. Suppose the plant runs more than 28 hours in a certain week. Each additional hour carries with it an additional idle hour, and at the same time eliminates an idle hour, making a surplus of \$2.40 per hour from this source. It also carries an additional overhead, or \$3. Thus, if the plant runs 32 hours, there is a surplus of \$21.60. Stated thus, it is a decided incentive to the sales department in dull times, and to the operating department when times are brisk.

BONUS FOR INCREASED PRODUCTION

Suppose the output is more than 1,500 per hour during this week. Each additional thousand requires its quota of supplies, but there is no charge against it for productive labor (we are taking a case where payment is not on a piece basis), for unproductive labor, or for overhead, so that there is a surplus of \$10.80 per thousand for all turned out above the normal rate of 1,500.

Here is good ground for a bonus to a foreman to see that the machine produces the clay products at a normal rate, or better. Thus if, in addition to running 32 hours in a certain week, the output is 1,600 per hour, then the additional 3,200 creates an additional surplus of \$34.56.

For an output at 51,200, the normal cost of supplies should be \$512. Suppose it is only \$500, then there is a surplus of \$12. This may result in one of three ways: either there was economy in their use, and they were purchased at a lower price, or, a lower cost more than compensated for an extravagant use of supplies; or an economical use more than compensated for any increase in their cost. If the difference is sufficiently great, this question should certainly be looked into carefully. Both the purchasing agent and the plant superintendent will be more concerned, if each is to be individually responsible for his share of the difference.

SUPPOSING AN INCREASE IN LABOR RATE

Let us assume, then, that the supplies cost \$500 instead of \$512, that the normal quantity was used and that the purchasing agent deserves the credit for the \$12 saved.

Suppose that during the week the productive labor cost rose to \$12.50 per hour instead of \$12. There is a deficit of \$16 due to this increase. And if the unproductive hourly rate is similarly raised to \$1.25 instead of \$1.20, there is a deficit of \$1.20. Finally, suppose the management has reduced the overhead to \$77 for the week, instead of \$84, there is a surplus of \$7 to the credit of the management. And now, as a result of all these, how does the week compare with the normal week used as a basis? Is there a gain or a loss, and how much? And who should be credited, or debited?

Collect these results as follows:

	Actual Operating Figures	Cost of Output at Normal Rates Per Unit Shown Above	Surplus
Weekly Output	51,200		
Working Hours	32		
Idle Hours	24		
Supplies	\$ 500.00	\$ 512.00	\$12.00
Productive Labor	400.00	409.60	9.60
Unproductive Labor..	30.00	40.96	10.96
Overhead	77.00	102.40	25.40
Total	\$1,007.00	\$1,064.96	\$57.96

Taking these surplus items in turn, we have the following:

	Surplus	Deficit
Supplies, lower cost.....	\$12.00	.....
Productive Labor		
Increase in Hourly Rate		
32 hours at \$0.50.....	.....	16.00
Increase in Output		
3,200 at \$8.....	25.60	.....
Unproductive Labor		
Increase in Hourly Rate		
24 hours at \$0.05.....	.....	1.20
Increase in Working Hours		
4 hours at \$2.40.....	9.60	.....
Increase in Output		
3,200 at \$0.80.....	2.56	.....
Overhead		
Decrease in Weekly Rate.....	7.00	.....
Increase in Working Hours		
4 hours at \$3.00.....	12.00	.....
Increase in Output		
3,200 at \$2.00.....	6.40	.....
Total	\$75.16	\$17.20
Net Surplus	57.96	.....

The use of this system promotes intelligent control, economy of manufacture and careful planning. It will repay a hundredfold for the time and expense in making the computations and determining the results. By such a process, it should be possible to show how much of the total cost of \$18,269.94 in the original problem, was loss; why and where these losses occurred; what was unpreventable and what could have been prevented. The paper referred to makes a big step in the right direction, and as already stated, it is the writer's view that it can be profitably extended.

* * *

Refractories Plants Operating 34 Per Cent

The "Iron Trade Review," in a recent issue contains the following regarding the refractories industry:

Operation among refractory makers is on an approximate 34 per cent. basis according to reports made at the quarterly meeting of the Refractory Brick Manufacturers' Association of the United States, held in Cleveland, September 15, at the Cleveland Hotel. One maker's plant was operating 100 per cent., another 94 per cent. and several were maintaining a 50 per cent. output. The lowest production exclusive of those plants which were closed down entirely was ten per cent. Percentages of this capacity which was being stocked varied. In some instances nothing was going into stock and in others 50 per cent. However, the majority of makers were stocking only a small portion of their output.

Wages being paid ranged from 25 cents to 47½ cents an hour. Opposition was voiced to any change in freight rates whereby the present differential rates from different fields would be changed by the interstate commerce commission at Washington.

* * *

Follow Them Up If Interested

Just within the last few days Brick and Clay Record has received letters that may mean orders to some clay manufacturer. Here they are:

A. Lewbald, 1509 A Etzel Ave., St. Louis, Mo., wants to know where he can obtain 450,000 sewer brick and 20,000 vitrified sewer brick.

George W. B. Hettler, Alamosa, Col., wants price, F. O. B. Alamosa, on 5,000 enamel brick.

EXPORTS *of* FIRE BRICK *and* FIRE CLAY

Thoro Discussion of the Principal Items of Volume, Gross Value and Average Price as Shown by Government Reports

WE PRESENT HEREWITH a set of tables that have been compiled after quite a little research work thru records of the U. S. Bureau of Foreign Commerce. The information contained herein ought to prove valuable to every exporter of refractories and also should afford interesting reading for others who are not directly interested in this subject. Tables No. 1, 2, and 3 all show the exports of fire brick to the countries using the largest amounts for the years from 1913 to 1920, inclusive. Table No. 1 shows the number of thousands of fire brick exported; table No. 2 shows the gross value of the exports, f. o. b. factory, and

and we surmise that it is caused by the fact that during some years a larger percentage of the higher priced ware such as chrome and magnesite were shipped than in other years. It is well known that Chile and Peru are good customers for chrome and magnesite in their ore furnaces. Argentine very likely does not buy much magnesite from this country as they have magnesite ore in their own country. During the European war some of this was shipped into this country for manufacture into magnesite brick, and dead burned magnesite.

AVERAGE PRICES INCREASE GREATLY

Examination of the total average prices shown in table No. 4 proves that the price for 1920 is 217.21 per cent. of the price for 1914, altho the average price for 1919 was higher than for 1920. This increase in the average price is of course in line with the increases that were in effect for shipments in this country, and are due in a great measure to the increase in demand and in the cost of labor, coal and other commodi-

Table No. 4

Totals of fire brick exported each year to all countries. This table is not a total of the amounts found on tables No. 1, 2 and 3.

	Thousands	Value	Average Price
1914	41,688	\$ 976,335	\$23.42
1915	23,901	652,131	27.28
1916	51,205	1,600,568	31.26
1917	82,562	3,321,271	40.23
1918	108,363	4,770,842	44.03
1919	51,252	2,747,512	53.61
1920	82,570	4,200,266	50.87

Prices and values are f. o. b. factory.

table No. 3 shows the average price per thousand, f. o. b. factory.

Fire brick in this instance is meant to include fire brick made of clay, magnesite and chrome, as the government records are kept in this way.

EXPORTS TO SOUTH AMERICA AND AUSTRALIA

Table No. 4 shows the total amount, total value and average price of the exports for each year to all countries from the United States. In tables No. 1, 2 and 3 many of the smaller customer countries are omitted so that the total of these tables will not be the same as the amounts shown on table No. 4.

On table No. 3 a large variation in the average prices from year to year will be found in the records for China, Chile, Peru and Australia. No explanation of this could be found

Table No. 5

Tonnage of Fire Clay Exported to Principal Customer Countries

	1917	1918	1919	1920
Totals for All Countries.....	44,098	50,529	27,663	58,960
Canada	38,607	45,415	29,235	40,477
Cuba	2,273	2,002	2,087	3,107
Mexico	792	1,050	994	3,096
Chile	591	330	97	71
Panama	208	210	105	236
Dominican Republic	120	211	165	210
Argentina .....	.....	.....	25	95

ties. The totals of all fire brick exported as shown in the first column of table No. 4, shows a fine growth. Naturally our exports increased from 1914 to 1918, as our competitor nations were not able to produce their normal supply of this

Table No. 1

Exports of Fire Brick to the Countries Using the Largest Amounts

	1913	1914	1915	1916	1917	1918	1919	1920
Canada	43,396	34,065	17,388	34,660	57,999	87,467	34,170	50,230
Cuba	1,570	1,807	2,156	3,564	7,539	6,985	6,986	13,846
Mexico	3,544	1,143	1,281	2,063	3,166	5,230	5,171	11,094
Dominican Republic	563	212	448	501	710	1,007	586	1,386
China .....	.....	.....	1	78	90	14	296	1,206
South America, except Argentine, Chile and Peru.....	368	581	760	1,884	3,518	1,997	278	680
Central America	405	2,391	1,228	1,348	431	199	381	665
Chile	158	245	567	1,543	3,154	1,245	362	654
Argentine	4	143	3	61	432	449	216	511
Philippines	29	49	100	28	135	94	187	495
Peru	260	554	.....	356	222	711	299	416
Australia	124	489	75	75	103	15	334	118
Italy .....	.....	.....	8	4,462	6,185	1,745	1,041	.....

The Figures Are Thousands, That Is, 000 Are Omitted in Every Case.

Table No. 2

Value of Exports of Fire Brick to the Countries Using the Largest Amounts

	1913	1914	1915	1916	1917	1918	1919	1920
Canada	\$863,157	\$718,599	\$436,175	\$966,764	\$1,953,738	\$3,367,932	\$1,667,220	\$2,250,434
Cuba	63,646	56,781	63,024	108,765	257,980	377,835	339,660	762,863
Mexico	95,788	31,058	31,268	51,681	142,046	244,049	206,800	527,625
Dominican Republic	15,585	7,250	12,976	13,768	24,008	50,427	41,231	102,187
China .....	.....	.....	17	5,137	4,796	759	53,439	58,326
South America, except Argentine, Chile and Peru	6,109	11,198	6,164	14,496	24,122	26,459	26,763	65,042
Central America	12,801	66,202	31,289	42,107	21,005	11,899	27,839	49,814
Chile	16,434	23,822	35,600	54,798	198,255	120,693	44,483	118,903
Argentine	159	11,870	90	1,367	21,090	29,317	17,415	39,178
Philippines	1,229	2,189	2,069	1,117	9,555	5,202	14,743	33,448
Peru	9,889	16,772	.....	22,304	39,587	153,706	65,677	60,549
Australia	4,962	20,896	8,021	11,473	6,387	1,802	46,657	6,519
Italy .....	.....	.....	296	193,025	420,136	177,866	104,264	.....

These values are f. o. b. factory.

material and in addition the demand was far beyond normal. Naturally, also, the totals of exports should be smaller for 1919 as the curtailment of the manufacture of war materials reduced the use of refractories. The total exports for the year 1920, however, show a large increase over 1919 and are the largest of any previous year except 1918. In fact they are almost twice as large as for 1914. This is clear evidence that our exportations of refractories is on a sound basis and in far better condition than before the European war.

CUBAN EXPORTS INCREASE SEVEN TIMES

This condition can be explained by an examination of table No. 1. The exportations to every country are larger for 1920 than for 1914, except for Central America, Australia and Peru. The Central American figures are larger than for any year since 1916 and the shortage for Peru is so small, comparatively, that it is almost negligible. The variations in the figures for Australia are so spasmodic that no conclusion re-

Table No. 6

Value of Fire Clay Exported to Principal Customer Countries.

	1917	1918	1919	1920
Totals for all countries	\$201,455	\$310,527	\$249,571	\$775,222
Canada	135,275	226,503	193,013	246,745
Cuba	21,241	33,293	29,540	52,456
Mexico	8,281	14,547	13,647	44,145
Chile	9,340	3,700	2,714	1,787
Panama	4,330	4,648	2,828	10,165
Dominican Republic	1,658	3,547	3,201	6,751
Argentine .....	.....	.....	961	4,514

Prices and values are f. o. b. factory.

garding the cause thereof can be drawn. Evidently the increased demand thruout the world for refractories during the war had nothing to do with this variation. Canada, our largest customer, bought 47.5 per cent. more in 1920 than it did in 1914, and more than in any previous year except 1917 and 1918. Cuba made a phenomenal growth and bought al-

most seven and two-thirds as much in 1920 as in 1914. No doubt a large part of this increase was caused by the increase in the erection of sugar refineries. Mexico bought over nine times the amount purchased in 1914. China has become our fifth best customer for this commodity regardless of the fact that previous to 1914 it did not buy any and in 1915 it used

Table No. 7

Average Price Per Ton of Fire Clay Exported

	1917	1918	1919	1920
Canada	\$ 3.50	\$ 4.99	\$ 6.60	\$ 6.09
Cuba	9.35	16.63	14.15	16.88
Mexico	10.45	13.85	13.73	14.26
Chile	15.80	11.21	27.98	25.17
Panama	20.81	22.13	26.93	43.07
Dominican Republic	13.82	16.81	19.40	32.15
Argentine .....	.....	.....	38.44	47.51

These prices are f. o. b. factory.

only one thousand of our fire brick. The 1920 figures are more than four times the 1919 figures.

CHANCE TO INCREASE BUSINESS

For some reason that could not be determined the exports to Central America since 1914 and to Chile since 1917 have fallen considerably. Evidently there is a good chance for improvement in the figures for 1920, and every exporter of fire brick should endeavor to regain some of this lost business. Argentine shows an increase for 1920 of more than three and a half times the amount of 1914, and the Philip-pines a total of almost ten times the amount for 1914. The figures for Italy are given to show the amounts that were shipped there in former years. No doubt this market was developed on account of the war conditions.

Table No. 3

Average Price of Exports of Fire Brick to the Countries Using the Largest Amounts

	1913	1914	1915	1916	1917	1918	1919	1920
Canada	\$ 19.89	\$ 21.09	\$ 25.08	\$ 27.89	\$ 33.68	\$ 38.51	\$ 48.79	\$ 44.80
Cuba	40.54	31.42	29.23	30.51	34.22	54.09	48.62	55.10
Mexico	27.03	27.17	24.41	25.05	44.87	46.66	40.00	47.56
Dominican Republic	27.68	34.20	28.96	27.48	33.81	50.07	70.36	73.73
China .....	.....	.....	17.00	65.86	53.29	54.21	180.54	48.36
South America, except Argentine, Chile and Peru	16.60	19.27	8.11	7.69	6.86	13.25	96.27	95.65
Central America	31.61	27.69	25.48	31.24	48.74	59.79	73.06	74.91
Chile	104.01	97.24	62.79	35.51	62.86	96.94	122.88	181.80
Argentine	39.75	83.00	30.00	22.41	48.82	65.29	80.62	76.67
Philippines	42.38	44.67	20.69	39.79	70.78	55.34	78.84	67.57
Peru	38.03	30.27	.....	62.65	178.32	216.18	219.66	145.55
Australia	40.02	42.73	106.95	153.00	62.01	120.13	139.69	55.25
Italy .....	.....	.....	37.00	43.26	67.93	101.93	100.16	.....

These average prices are f. o. b. factory.

WE EXPORT TO 49 COUNTRIES

Until the records were examined we were not aware that our exportations to some of the distant parts of the globe were as extensive as the figures show. It seems odd that we can ship almost \$47,000 worth of fire brick to Australia in one year, when it is a well known fact that English brick can be made cheaper than ours and the brick can be shipped as ballast for a very small freight charge. Evidently Yankee push or better quality is responsible for such large sales to one of England's possessions. The figures for other countries afford corresponding surprises.

In the list of exports for 1920, there are listed 49 countries in every part of the globe. Even France, Greece, British and Portuguese South Africa, Dutch East Indies and Japan are included, in addition to those shown in the tables.

Our 1920 exports to each of the following countries: Mexico, Dominican Republic, China, South America (excepting Argentine, Chile and Peru), Argentine and Philippines were more than double our 1919 exports. Our 1920 exports to each of the following countries: Cuba, Central America, Chile and Peru were almost double the 1919 figures. Of all the countries listed on table No. 1 only Australia and Italy show smaller exports for 1920 than for 1919.

COMPARISONS FROM CONSULAR REPORTS

Some interesting sidelights can be gleaned from the consular reports. For the five years from 1910 to 1914, both included, the following amounts of fire brick and fire clay were imported into Argentine:

From	Thousands Fire Brick	Metric Tons Fire Clay
Great Britain	21,903	14,934
Germany	1,430	1,445
Belgium	735	1,924
United States	720	18
France	220	1,938
Austro-Hungary .....	.....	206
Italy .....	.....	138
Other Countries	77	6,030
Totals	25,085	26,633

Again the figures for 1917 show the following comparisons of exports of fire brick and fire clay from England and the United Kingdom and from the United States for Argentine:

	Fire Brick		Fire Clay	
	Thousands	Value	Tons	Value
United Kingdom	1,664	\$32,115	1,822	\$19,181
United States	99	1,911	106	1,120
For all Countries.....	1,793	34,605	2,101	22,112

Another year, 1915, shows the following comparison for shipments to Peru:

	Fire Brick		Fire Clay	
	Thousands	Value	Tons	Value
United Kingdom	906	\$12,270	219	\$4,844
United States	570	7,553	16	357
Total for all countries.....	1,728	23,159	253	5,584

The records for Brazil show that about one-half of the refractory brick shipped into Brazil are exported by England and that about one-tenth of the total comes from the United States.

Tables No. 5, 6 and 7 showing the exportations of fire clay to the principal customer countries are also appended. The records prior to 1917 were not kept in this condition, so that extensive comparisons are not possible.

Chile, in 1916, out of a total of 4,432.69 tons of fire clay, imported 1,826 tons from the United Kingdom and 2,464 tons from the United States.

The prices on fire clay, as shown by table No. 7, fluctuated almost the same as the average prices on fire brick, as shown by table No. 3. The prices for Argentine, however, did not vary in direct proportion as did the prices on fire brick.

* * *

Another Use for Old Paving Brick

"Dependable Highways" wants to know "When is a brick pavement 'worn-out?'" In connection with this question the September issue of that bulletin contains the following item which appeared in the Lancaster (Ohio) Gazette:

"What's been done with the old paving brick removed from South Broad Street? Some 'prominent business men' of the city had advocated throwing them on the city dump, or any other out-of-the-way place—just to get rid of them.

"Public Service Director Ernest Rowles didn't accept this advice but used the brick for the improvement of alleys. In consequence, nearly five squares of city alleys have been paved with brick taken from Broad Street between Main Street and the railroad. The city, in addition to furnishing the brick, provided the engineer to establish the grade. Property owners themselves paid for the construction work.

"And from all accounts Carl Garling, paving engineer, has done the job so neatly that it is difficult to realize that the alleys paved were actually improved from the worn-out (?) brick taken off old Broad Street."

* * *

Coal Prices in Various Fields

Domestic as well as industrial buying of coal continues dull and in small volume in spite of efforts which have been made to stimulate the markets. The "Black Diamond" quotes the following prices for some of the more important fields:

"Southern Illinois, including Saline, Franklin and Williamson counties, domestic sizes, \$3.10 to \$4.05; mine run, \$2.75 to \$3.40; screenings, \$0.85 to \$2.85. Production about 40 per cent.

"Indiana fields, prepared sizes, \$3.25 to \$3.50; mine run, \$2.25; screenings, \$0.75 to \$1. Production about 25 per cent

Central Illinois, prepared sizes, \$3.25 to \$3.75; mine run, \$2.50 to \$2.75; screenings, \$1.15 to \$2.25. Production between 30 and 35 per cent

"In the Columbus, Ohio, market the following quotations hold: Hocking lump, \$3.50; Hocking mine run, \$2 to \$2.75; Hocking nut pea and slack, \$1 to \$1.50.

"Quotations from the Louisville, Ky., fields, spot at mine, show Harlan quoting lump at \$3.50 to \$3.75; mine run, \$2.25 to \$2.40; screenings, \$1.40 to \$1.60; Jellico and Straight Creek prices are about the same as Harlan. Hazard is quoting lump, at \$3.25 to \$3.50; mine run, \$2 to \$2.25; screenings, \$1 to \$1.25. West Virginia is about on a par with Hazard, altho being shaded somewhat. Elkhorn is taking the Hazard price, with a slightly higher price on some mine run. Western Kentucky quotations, at which the bulk of the movement is going, show prepared, \$2.60 to \$3.25; mine run, \$2.25 to \$2.75; screenings, \$1 to \$2.

"Prices in the central Pennsylvania fields are virtually the same as quoted heretofore, and figured on a net ton basis, range about as follows: Pool 1, \$3; pool 9, \$2.25 to \$2.40; pool 10, \$1.95 to \$2.15; pool 11, \$1.65 to \$2.10, and pool 18, \$1.40 to \$1.55. Tidewater price at New York, per gross alongside, are as follows: Pool 9, \$6 to \$6.25; pool 10, \$5.75 to \$6, and pool 11, \$5.50 to \$5.75.

The BUILDING SITUATION

CONSTRUCTION continues to progress in the New England districts. Weekly totals are holding from \$3,500,000 to \$4,000,000 in actual contract awards, and the bulk of work is for immediate operations. Public and housing structures easily take the lead, while industrial construction holds at low ebb.

The Boston material market is fairly active. Common brick from the New York yards has found rather a firm level at \$19 a thousand, delivered, and this is the prevailing figure at leading dealers. New England production is selling for \$21, with good supply of material available. Water-struck, kiln run brick is quoted at \$30, on the job, while selected stocks of this character are around \$32.

LITTLE CALL FOR FACE BRICK

The call for face brick is rather slow. Prices range from \$37 to \$55 a thousand for different varieties, with rough texture stocks moving the best at an average price range of \$50. Fire brick shows no change from recent levels of \$60 and \$70, the first for standard No. 1, and the latter figure for particularly high grade stock. Other refractories and special shapes are operating under reduced call.

Miscellaneous burned clay products are holding their own in this market of firm price levels. Terra cotta partition blocks, 4 by 12 inch, are moving under a quotation of \$140 a thousand, while 8 by 12 inch sizes maintain at \$260, delivered. Standard sewer pipe is 40 per cent. off list, and double strength material 25 off.

REDUCED BUILDING COSTS

Indisputable evidence of the marked reduction in construction costs in the New England district is shown by a late report issued by the division of statistics, Department of Labor and Industries, Massachusetts. Dealing with the month of August, the latest period for which figures are available, it is pointed out that reports from 35 cities of the state show a volume of work comparing favorably with the corresponding month of last year, despite the fact that indicated investment totals in buildings are lower. The aggregate for the month from these cities is \$6,820,966, a decrease of 15.9 per cent. from the figures of August 1920, which stood at \$8,110,412. Commenting upon the sums, the report says: "It should be borne in mind that costs of building materials and of labor in August, 1921, were decidedly lower than in the same month of a year ago, and the actual volume of work compares most favorably."

PROVIDENCE

Industrial work is bringing increased calls for building materials at Providence, R. I. Common brick is bringing from \$28 to \$30 a thousand in the local market, delivered. Face brick is selling from \$40 to \$60, according to selection, and fire brick maintains levels at \$80 and \$100 a thousand, with noticeable increased demand prevailing.

Various burned clay specialties are advancing in call, with prices holding firm. Drain tile, 3 inch, is priced at \$12 per 100 feet at the different supply yards; 4 inch material is \$16 per hundred. Flue lining, 8½ by 8½ inches, is selling for \$45 a hundred feet, while 8½ by 13 inch material is priced at \$67.50. Partition tile, 4 inch, maintains at \$220 a thousand.

BIG ACTIVITY AT NEW YORK

Speculative building in the line of apartments and dwellings at New York is holding at a high level and the bulk of distribution of burned clay products and other building materials is for this purpose. Common brick is easily the

feature of the local market, with price increasing from \$15 to \$16 under a firm tone. The majority of sales are now being made at the latter figure, altho \$15 brick is still available in different quarters. Second-hand material holds at \$45 for 3,000 brick, delivered. New common brick is priced at \$18.50 on the job by leading dealers.

The common brick reaching New York from the Hudson River yards is rapidly absorbed from week to week, and there is practically no reserve in the wholesale market at the present time. Sales are now averaging as high as 45 cargoes a week, as against about half this amount sixty days ago. Brooklyn borough continues to draw heavy on the wholesalers, and about 20 cargoes a week are being distributed here.

The call for face brick at New York and vicinity indicates growing strength. Many apartment houses are being constructed with fronts of this material, and local dealers look forward to good business well into the winter months. There is a little tendency in prices to advance, but the market as it stands shows levels varying from \$45 to \$55 in the average. Buffs, both rough texture and smooth, are around \$50 a thousand on the job; grays are selling from \$53 to \$55; and reds are priced at \$45.

AT THE HUDSON RIVER YARDS

The seasonal yards in the Hudson River brick district are nearing their close and heavy stocks of the summer have been depleted to a point that indicates less reserves for the winter period than for many seasons past. All-year plants are maintaining outputs at a fair status and it is likely that manufacture will be continued indefinitely. With the present tendency to proceed with construction in the metropolitan districts, the reserves for the spring season of 1922 will be very low.

INCREASED BUILDING IN NEW JERSEY

September rounds out as a banner month at Newark, N. J., with totals standing at over \$1,500,000, or more than twice the amount of the indicated investment as shown by building permits issued for the corresponding month of last year. The September 1920 figure was \$685,805. Apartments and dwellings are the center of activity thruout this section, and industrial work is only of a very minor character at the present time.

Brick is being used in far larger quantities for house construction in the different New Jersey cities, and proportionate good call is being made upon the supply dealers and producers. In the Northern part of the state, the price ranges from \$20 to \$23 a thousand, the first noted figure prevailing at Newark, Paterson and vicinity, and the latter at Morristown and surrounding districts. Some dealers are asking \$21 a thousand for Hudson River common in this section.

HACKENSACK BRICK QUOTED AT \$17

The Hackensack yards are commencing to show signs of the close of the seasonal brick-producing year, and before many weeks production at the different outdoor plants will be discontinued. Fair distribution is being made at the present time with a \$17 figure prevailing at the kiln.

Trenton producers are asking \$15 to \$17 a thousand for brick at the kiln, and from \$18 to \$20, delivered, according to the run of material. The season has not been as satisfactory in this section as might be, and a number of yards are now closed down. Reserves are not of appreciable

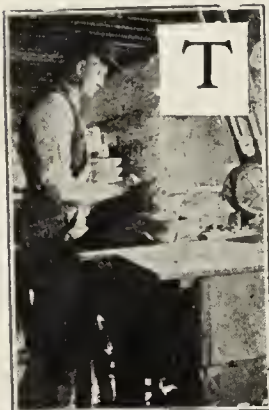
(Continued on page 532)

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

130 A. C. S. MEMBERS ATTENDED CERAMIC DAY AT CHEMICAL EXPOSITION



THIS YEAR'S Chemical Exposition, which was the Seventh National Exposition of Chemical Industries, was no less successful than others of previous years. Fully 510 exhibitors filled the booths along the various aisles of the mammoth hall. Some 40 or 50 of these exhibitors were directly related to ceramic manufacture.

Those interested in the chemical industry were offered a splendid opportunity to study the various lines of chemical equipment exhibited, while to others the Exposition was a liberal education as to the importance of the chemical industry and the extent to which it enters into the program of our daily life.

CERAMIC DAY AT EXPOSITION

The Exposition was held during the week of September 12-17, inclusive, in the spacious Eighth Coast Artillery Armory, New York City. Owing to the mammoth size of this building, it was possible to hold the entire exhibit on one floor, making it convenient to exhibitors and guests alike.

Friday, September 19, was Ceramic Day. On this day part of the afternoon was devoted to a program on subjects of interest to ceramic men. At other periods thruout the week programs were devoted to such subjects as crushing and grinding, drying and evaporating, paints and varnishes, power plant, and dyes and colors. Approximately 130 members of the American Ceramic Society registered at the booth which was maintained by this organization, and a good many of these were present at the ceramic program on Friday afternoon.

The meeting was opened by an address by John G. Jones, representative of the Alexander Hamilton Institute. Mr. Jones gave a general survey of economic conditions in business as they relate to the clay-working industries.

M. B. GREENOUGH TALKS ON RESEARCH

One of the most interesting papers read at this session was that contributed by M. B. Greenough, secretary, National Paving Brick Manufacturers' Association. Mr. Greenough made reference to the research program planned by four national clay associations. By undertaking this

program, he said, the heavy clay products industry is allying itself with the progressive industries of the nation. It is trite to recall that there is no such status in industry as standing still. Either economic progress is made in production and distribution, or loss of economic prestige is suffered.

He furthermore said that the clay-working industries have been built upon: (1) Wide distribution of raw materials. (2) Low proportion of labor cost to total production cost. (3) Cheap fuel. (4) Low freight rates. One alone of these four divisions remains today, substantially the same as its pre-war status. Clay, one variety or another, is still generally distributed thruout the country. The other items have all changed, and have resulted in increased costs. The article is published in full in another section of this issue.

TALK ON CHEMICAL STONEWARE

P. C. Kingsbury, of the General Ceramic Co., gave an interesting report on the progress made in the manufacture of chemical stoneware. He mentioned that considerable advancement had been made in the fabrication of chemical stoneware since the commencement of the World War. Most any shape that can be made from iron or metal is now also possible of chemical stoneware. This development has led to the production of some very complicated shapes.

While some pieces are intricate in shape and form, others are extremely large and heavy. Some of the products manufactured weigh as high as 2,000 pounds. Of considerable interest is the fact that long pipe, 14 feet long and 4 inches in diameter, have been formed and burned so that they are perfectly straight, which, it will be recognized, is a difficult task in clay product manufacture.

Chemical stoneware is made by the admixture of certain clays and glazed with a salt or special glaze. When properly made, chemical stoneware is resistant to nearly all chemical solutions except caustic alkalis, phosphates, or hydrofluoric acid. It is also very strong physically.

GREAT DEVELOPMENT IN STONEWARE INDUSTRY

The first large pieces of chemical stoneware were made according to very primitive methods, and a large number of men were required to build up and form the pieces. The development in the industry, however, has been great, and now mechanical devices are usually employed, so that frequently one man can do the equivalent amount of work that fifteen to twenty men formerly did.

J. Spotts McDowell, of the Harbison-Walker Refractories Co., addressed the assemblage on the subject of refractories. He made the interesting statement that two-thirds of all the refractories manufactured in the United States were used in the steel industries, and the greater part of this amount is used in the construction of open-hearth furnaces. Approximately 60 pounds of refractories are required in the manufacture of every ton of steel. Of this quantity, one-half is silica brick, one-fourth clay brick, 6 to 7 pounds are magnesite brick, and 1 pound is chrome brick.

USE OF MAGNESITE IN REFRACTORIES

Mr. McDowell also discussed the sources of the raw material, magnesite. He stated that there were available in the state of Washington some three and a half million tons of magnesite for use in refractory manufacture. Altho the Washington magnesite does not contain the required quantity of iron necessary to manufacture a good grade of magnesite brick, iron can be added separately during the process of manufacture, and a good brick obtained.

The Washington magnesite is an amorphous material, while Austrian magnesite, which was used almost exclusively before the war, for refractory brick, is crystalline. Austrian magnesite is mined in terraces, the quarry being fully 800 feet deep.

A. C. S. CONFERENCE DURING EXPOSITION

During the Exposition week, an executive conference was held by executives and committee members of the American Ceramic Society. This conference was held in one of the rooms of the Hotel Commodore, New York City, on September 15 and 17. The idea of the meeting was to formulate suggestions and recommendations to the Board of Trustees of the American Ceramic Society that would tend to make the Society function in a manner better than it has heretofore. It is thought that the American Ceramic Society can, by re-arranging its organization slightly, be more effective in serving its membership and the industry with which it is allied.

Nearly every phase of A. C. S. activity was discussed, including local sections, industrial divisions, membership, ceramic courses, publicity, journal, etc.

The outstanding feature of the conference was the recommendation of the reorganization of the various committees to form what will be known as a Research Service Coordinating Council, to be composed of five members. This committee will be made up of the secretary of the society, who will be chairman ex officio, and four members appointed by the Board of Trustees to serve as chairmen of four different committees. These committees, it is recommended, would be a Committee on Investigation, a Committee on Standards, a Committee on Geological Surveys, and a Committee on Symposiums, Monographs, Bibliographies and Statistics. By rearranging the committees in this manner it is felt that the activities of the society can be carried on more effectively and with greater progress and facility than has heretofore been possible.

* * *

Pottery Workers Want Ten Per Cent. Increase

According to a report recently made public the pottery workers of the United States threaten to strike unless satisfactory agreements are reached with the factories. The workers are asking for a ten per cent. increase while the factories wish to put thru a 22 per cent. decrease in wages. The operatives claim to be the richest and most independent union in the country. They are not affiliated with any labor organization and are strongly organized, claiming a 100 per cent. union, as no apprentices are accepted as workmen until they are union members. The potters also claim a reserve fund of more than \$2,000,000.

* * *

Pottery Men See Big Fall Trade

Indications are that business for the general ware potteries will be just as good this fall as has been the custom for the past years. Demand for dinner-ware in September has shown an appreciable increase over the previous month. Salesmen on the road have found the going easier than during summer.

The improved demand for dinnerware from the South is regarded as a good omen by pottery manufacturers. It is thought the rise in cotton prices is partly responsible for the increase.

A few generalware potteries are not in operation, save for decorating shops, which are running full time. The majority of plants in the Eastern Ohio district now active, are working about 60 per cent. of capacity in the clay shops while a few are reporting 75 per cent. schedules. Most all pottery manufacturers are arranging lines for 1922 delivery, which will be presented in December and January. Hotel ware is in good request. Vitreous china dinnerware and hotelware plants have been working on far better schedules the last two months than semi-porcelain pottery plants.

* * *

Ask Embargo on Chemical Stoneware

A recent issue of "Chemical and Metallurgical Engineering" contains the following regarding chemical stoneware:

"The manufacturers of chemical stoneware have joined in submitting a brief to the Finance Committee of the Senate asking that their products be protected by a duty of 200 per cent. which they admit to be practically an embargo. The tariff bill as passed by the House provides a duty of 35 per cent. ad valorem on chemical stoneware, chemical porcelain and other vitrified wares. The manufacturers of stoneware contend that their industry is relatively of as great importance as is the dye industry, since carefully and laboriously made stoneware is absolutely essential to the handling of acids, alkalis and other chemicals. It was pointed out that no machinery is used in this industry except in the grinding of the clay. Labor, which must have a special expertness, represents more than 80 per cent. of the total cost of the finished product. It was contended that chemical stoneware should be taken out of the paragraph containing porcelain and other vitrified ware and placed in a paragraph by itself."

* * *

Onondaga Pottery Builds Extension

The Onondaga Pottery Co., 1858 West Fayette Street, Syracuse, N. Y., has awarded a contract to Dawson Brothers, Union Building, for the erection of a new pottery unit on Court Street, estimated to cost about \$40,000. Construction has been started and a switch has already been laid from the New York Central lines to the site of the factory. The foundations for the two biscuit and two glost kilns are now completed and the installation of machinery, plumbing and so forth, will be under way very soon.

* * *

Florida to Have New Pottery

The Orlando (Fla.) Potteries, Inc., has been organized with a capital of \$25,000 to operate a local pottery. M. J. Daetwyler is president and G. D. Krebs, secretary and treasurer.

* * *

Testing Georgia Clays

As previously announced in *Brick and Clay Record*, a co-operative agreement has been effected between the United States Bureau of Mines and the Central of Georgia Railway for investigation by the Ceramic Experiment Station, Columbus, Ohio, of the white clay and bauxites thru central Georgia along the railroad right-of-way. R. B. Gilmore formerly ceramic chemist with the Vesuvius Crucible Co., Swissvale, Pa., and H. M. Kraner, formerly ceramic assistant of the Bureau of Mines, have been assigned to this work.

Preliminary tests on the effects of low calcination temperatures on the colloidal content of Georgia white clays have been made. By calcining Georgia clay to from 500 to 600 degrees C. the absorptive properties were reduced to those of the English china clay, without materially reducing its plasticity.

* * *

Noted English Potter Dies

Thomas F. Wood, chairman of the board of directors of Wood & Son, pottery manufacturers, and former mayor of Burslem, England, is dead. He died in his 80th year. He was known to many of the older English pottery workers in the United States, and also had an acquaintance among American buyers who frequent the English pottery district of Stoke-On-Trent.

Mr. Wood was one of the most widely known of English pottery manufacturers and started in business as a potter himself while still a young man, being associated with his father, William Dunn and James Rathbone, formerly a manager at Davenport's plant at London, England.

* * *

Tile Proves Ideal Material for Restaurants

In building and equipping restaurants and other eating places today a great deal of stress is being laid on the significance of sanitation. This is, it might be stated, second to none of the very important factors that go so largely into the building of the modern restaurant. There is, however, another factor of almost equal importance with sanitation which the modern restaurant owner must recognize and that is the possibility of beauty combined with sanitary features. This is necessary to attract a clientele that places a high value on environment.

That these two features can be successfully combined has been conclusively demonstrated by the new Mills Restaurant



General View of Mills Restaurant. The Floor, Walls, and Part of the Ceiling Are All Tile.

in Cincinnati, Ohio. Clay tile have made it possible to execute this idea in a manner which could hardly have been accomplished in any other material.

Mr. Mills is an old restaurant man and selected tile for the interior of his establishment because he recognized the unequalled decorative and sanitary possibilities of this material. He adopted the Dutch mill as the significant trade mark in connection with his business and this idea is very successfully carried out in the decorations.

The restaurant proper is composed of two sections. The

main dining room, about 150x48 feet in size, has been finished in Rookwood wall tile in blue, black and gray in strong colors, and vitrified floor colors. There is also a clock and fountain of tile, while the grills that temper the air are also of tile. About the walls are twenty-one scenic panels, depicting Dutch life and scenery, the color effects being attractive and the panels done in tile add wonderfully to the decorative and artistic environment.

Adjoining this room is the "sales department," where the food is selected, it being a cafeteria, which is done in light glazed wall tile with a border decoration of Rookwood



A Close View of the Wall Showing the Pretty Decorative Panels. These Dutch Scenes Are Distributed Thruout the Entire Room.

faience tile. The floor in this section is the same as in the dining room. The kitchen is laid with red floor tile, which add to its sanitary effect. The store room and employees' washroom are also finished in this kind of floor tile. The bakery and salad room have their proportion of clay tile also.

The interior has a most fascinating appearance and the work is ranked with the best that has been done in artistic tile work. It was executed by Charles L. Shannon & Sons, Cincinnati, and stands as a very excellent recommendation of clay tile.

* * *

Maddock Plant Working Capacity

The Thomas Maddock's Sons Co., Trenton, N. J., manufacturer of sanitary earthenware products, has resumed production on a full time operating basis.

* * *

Homer Knowles Plant Ready for Work

The Homer Knowles Pottery plant, which has been in process of construction during the past few months at Santa Clara, Cal., was practically completed on the first of October. It will mark the beginning of fine pottery manufacture on the Pacific Coast. The Knowles plant complete represents an investment of about \$380,000. W. H. Cook, formerly of East Liverpool, Ohio, and a well known pottery man, is superintendent of the Knowles plant. Mr. Cook has been very busy getting affairs in shape for the opening of the plant. A cargo of English clay arrived recently which included 672,000 pounds of No. 10 English china clay, and 896,000 pounds of No. 12 English ball clay, which is one of the largest single shipments of English clay ever made to a pottery plant in the United States.

Harry Cotton, formerly of Sebring, Ohio, has made the first

case for casting, of a "Pacific" shape covered dinner dish which will be one of the first articles manufactured by the Knowles factory.

* * *

Large Fire in New Jersey Pottery

Loss estimated at \$50,000 resulted from fire which gutted three buildings of the Acme Pottery Co., May and Beakes Street, Trenton, N. J., on September 1. Insurance will cover the damage. An overheated kiln is thought to have been responsible for the blaze.

Large quantities of material and all the woodwork of the three buildings thru which the fire raged were destroyed. Some of the walls were so badly damaged they will have to be rebuilt. James A. Dorety, president of the company, says the fire will not cut down the production of the plant.

* * *

Ohio Concern Opens Boston Office

The Knowles, Taylor & Knowles Pottery Co., of East Liverpool, Ohio, has established a permanent office and sample room in Boston, Mass., this being the first time this well known firm of dinnerware manufacturers has ever been so represented in the New England territory. George A. Granville will have charge of the new sample room, which is to be opened at No. 111 Sumner street. The general line of dinnerware and hotel ware will be shown there, including the decorated and plain white lines.

* * *

Strike Closes Stoneware Potteries

Following a meeting of the stoneware pottery manufacturers of the United States held in Chicago, Ill., not long ago, A. E. Hull, vice-president of the American Clay Products Co., of Zanesville, Ohio, went to the East Liverpool district in company with Guy Cooke, manager of the New York offices of this company, and D. V. Kinnan, eastern salesman. Mr. Hull was on a "little vacation" so to speak, as all the stoneware potteries in the Crooksville, Ohio, district are idle on account of the stoneware pottery workers refusing to accept a reduction in wages.

* * *

Planning on Addition

The Standard Sanitary Mfg. Co., Ontario Street, near Preble Avenue, Pittsburgh, Pa., has filed plans for the erection of an addition to its plant to cost about \$15,000. Construction will be commenced immediately, and it is proposed to have the extension ready for service at an early date.

* * *

New Producer of Pottery Materials

The Penland (N. C.) Feldspar & Kaolin Co. recently organized, is planning for the extensive development of kaolin and feldspar properties in that section. A plant will be established and large daily production maintained. The company is headed by Harry, L. P., and Charles R. Bailey, Penland.

* * *

Another Pottery in Alberhill Family

A subsidiary corporation of the Alberhill Coal & Clay Co., Los Angeles, Calif., has just been formed to be known as the Alberhill Pottery Co. It will give its entire strength to building up this end of the clay business, loosely known as

"art pottery," altho it includes much that is highly useful as well as merely decorative.

At the Industrial Exposition held in Los Angeles in August, the Alberhill company was a prominent exhibitor and its varied and interesting display drew a group all the time. This was one of the dominating reasons for launching the new enterprise. Fourteen different branches, or rather, fourteen different concerns that are using the Alberhill clays exhibited at that time, and many wishes were expressed for an extension of the ceramic industry of Southern California.

When it was decided to go into this branch it was necessary to provide manufacturing facilities, so the company leased a part of the Kohler & Myers (K. & M.) pottery, at Fifty-second and Santa Fe Avenue, for a term of years with the privilege of acquiring extra space if needed. And that it will be, is already patent even to a casual observer. A pulverizing machine has recently been installed and this makes it possible for the Alberhill company to carry out its plans for a plant to separate, grind, pulverize, wash and mix clays for the ceramic trades.

Bins are to be installed for the various clays that will be dumped into them direct from the freight cars and a blower system will distribute the ground and pulverized clays to other bins and mixing machines, where they will have added to them the ingredients required according to their purpose, such ingredients including feldspar, silica and so forth. A kiln will be installed at this plant for the first firing of commercial insulators and it is already clear that this kiln will be run to capacity from the start, until a larger plant for insulators becomes a necessity.

This growth of the company has made it incumbent that a larger technical and mechanical force be added, so R. Lenfesty of Chicago, has been engaged, while T. H. Young, one of the ceramic engineers who has been using the research laboratory, and who was formerly general superintendent of the Jeffries-DeWitt Porcelain Co. of Huntington, W. Va., has charge of the insulator department. The clay compounding, washing and mixing plant is in charge of Joel Wacholder, formerly general manager of the Illinois-Pacific Glass Co. at San Francisco. Finlay M. Drummond, former manager of the Steubenville (Ohio) Potteries, is production expert. William McClintock, long with the company, is advanced to the responsible position of general production superintendent of all the Alberhill industries. All of these men have a direct interest in the business and each is vitally alive to the wonderful possibilities and determined to advance this clay company to its proper place at the head of such organizations.

* * *

Expect to End Shutdown

The Universal Sanitary Mfg. Co., New Castle, Pa., manufacturer of sanitary earthenware products, is planning on the resumption of production at its plant at an early date. About 250 men will be employed for initial operations. The pottery has been closed down for a number of months past. C. J. Kirk is superintendent.

* * *

Electrical Ware Plant Starts Up

The plant of the Universal Clay Products Co., in East Sandusky, Ohio, will be reopened October 1. Notice of the resumption of activities has already been posted. Approximately 100 men and girls employed when the establishment was closed nearly a year ago will go to work on part time. The company manufactures insulators and other clay products used in electrical work. Officials say the outlook for the future is growing brighter daily.

The SUPERINTENDENT

Helpful Hints for Practical Men Whose Problem is Maximum Production With Minimum Cost

Removing Large Pulleys from Shaft

The article on page 275 of the August 23 issue of *Brick and Clay Record* entitled, "Removing Keyed Pulleys From a Shaft," by C. H. Radebaugh, is very interesting, but it did not seem to go into some of the questions as fully as it should.

The description of the method of heating the hub of a pulley with a blow torch so that the pulley can be moved on the shaft is satisfactory only for small pulleys. If used on larger pulleys with thick hubs, the part that is heated first will cool off entirely before the torch is returned to that spot. In other words, heating a thick hub with a blow torch is impractical.

The principle of heating the hub of a pulley, gear, or sprocket is to make it expand away from the shaft so that it can move along the shaft. To do this with a thick hub, the following method is advised, when the shaft is horizontal.

After hitting the hub with the peen hammer, and applying oil wherever possible, wrap each part of the shaft on the side of the hub with waste or old rags and soak them with water. Then build a platform about six or eight inches below the hub and place therein more waste or old rags soaked with kerosene. Light this oil and keep the fire burning, until the hub is hot enough to cause a drop of water to spatter. The fire should be built so that the hottest part of the flame will encircle the hub and every part of the hub must be touched by the flame. Where practical to build two fires, one on each side of the spokes, so that the pulley can be rotated, the heat can be transmitted quicker. At the same time, it is necessary to keep the waste or rags on the shaft wet, so that the shaft will remain cool and not expand.

When the hub is sufficiently hot lay a bar of iron flat on the shaft (using an old piece of belt, thin wood or rag to prevent marring the shaft) so that it will fit square on the hub. Drive this bar with a sledge hammer and the pulley will readily slide on the shaft away from the key if the heating process has been carried on properly. In some cases, the pulley will drive against a key. Of course, any burrs or rough places on the shaft should be removed by filing before the attempt is made to move the pulley.

This method has been known to move pulleys in a few hours, which have been worked on by competent machinists for two days. It is also suitable to moving a pulley that

is fastened with a set screw instead of a key, but which has become fastened to the shaft by rust.

The use of water soaked rags or waste on the shaft is used to prevent the shaft expanding. If the shaft is heated in proportion as much as the hub it will expand and the contact or friction be as great as ever.

One of the important points to remember, however, is to have everything ready so that when the hub has been heated sufficiently, the work can be accomplished in as short a time as possible, before the hub has a chance to cool off.

Most of the keys used in the clay products industry are of the square type, and at times they do not have gib heads. Some pulleys are located next to a bearing or other pulley so that it is difficult to use a key drift. If the key in a case of this kind has no head it is impossible to move the pulley unless a method like the one suggested above is used, and even then it is very difficult, and at times impossible.

The draw clamp device described in the original article can be used very effectively after heating the pulley as described herein.—*W. P. Conaway, Factory Manager, Paducah, (Ky.) Pottery Co.*

* * *

Setting Difficult Shapes

The accompanying sketch shows the method of setting large pieces of clay products without danger of warping or cracking. This process was followed in a fire brick plant making slabs 4-in. by 26-in. by 26-in. and can be used in any part of the kiln. If used on the bottom, it would be better to use a few brick under the special shape. If the shape is 26 inches high as shown in our sketch, six courses of brick are set with straight joints. The seventh course is corbelled about two inches on each side, and the eighth and ninth courses are set face to face directly above the tile. In this way, the eighth and ninth courses support the weight of the setting on top. No weight is supported by the tile, and therefore there is no danger of the tile warping or cracking due to weight.

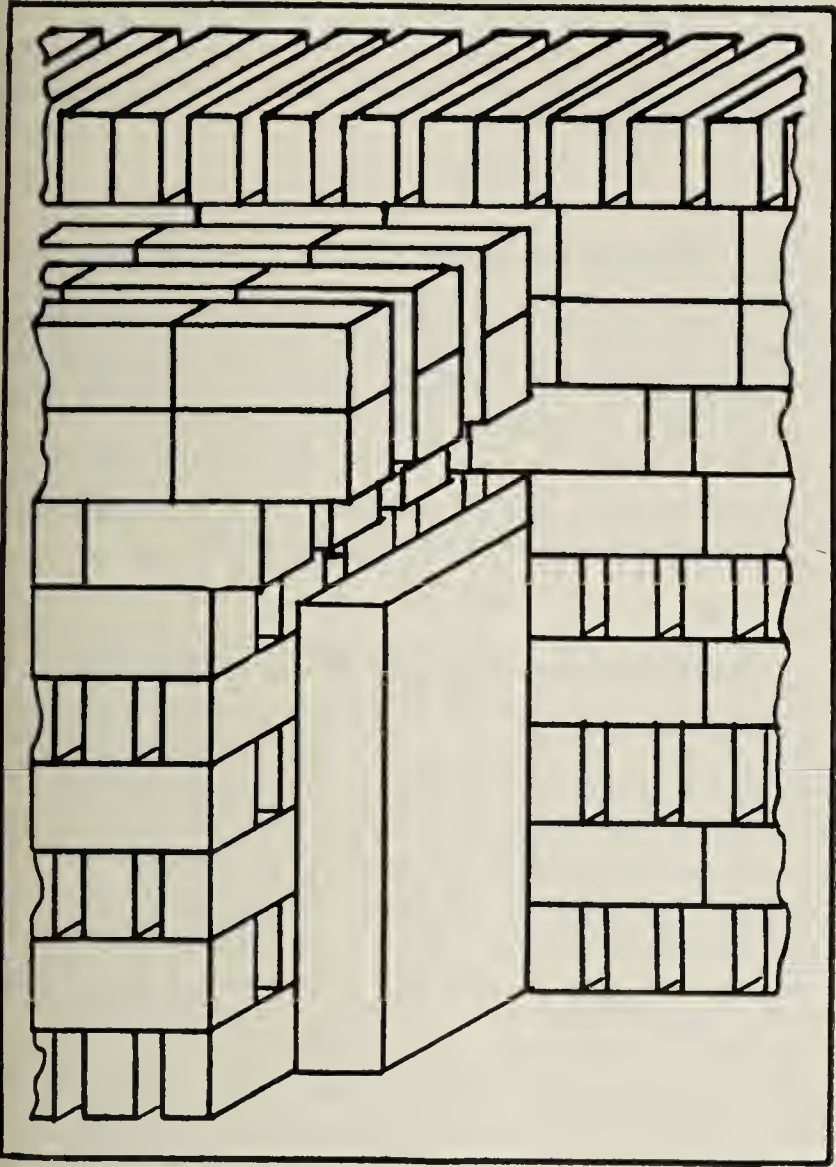
This was practiced in a fire brick plant where more than one-third of the output consisted of special hand-made shapes, and produced more than 90 per cent. of good ware. Under the same conditions the former method of setting, produced less than ten per cent. of good ware even tho the shapes were placed in the most advantageous place possible. Circular slabs of 36

Every Plant Should Determine Speed of Firing

It is impossible to work out rules covering the time-temperature curves in burning, owing to the fact that certain specific properties of the clays, vary widely according to the composition and physical structure of the different materials. It is strongly advisable that every plant owner should determine how long it takes to complete his burn under different speeds of firing and temperature conditions. Every superintendent and plant owner should read Technologic Paper No. 17 entitled the "Function of Time in the Vitrification of Clay," which is published by the Bureau of Standards, and may be had by writing to the Government Printing Office, Washington, D. C. Six typical clays were tested, and the results which are given in the above named booklet may serve as a guide in estimating the time effect upon similar clays.

inch diameter and three inch thickness and cover tile 6 inch by 12 inch by 60 inches were burned in the same style of setting and came out almost 100 per cent. good.

This method is similar to that followed in "bridging" or "boxing" difficult shapes made of silica. In setting silica shapes, however, at times 20 or 25 per cent. of the contents of the kilns are "burned" or "old" silica brick or shapes. These



Showing Method of Setting Large Tile Made of Fire Clay So That No Weight Bears On Them.

burned shapes are used for covers and corbelling in order to stand the excessive weight and strain. If green shapes are used, not only would they break, but they would damage a large amount of material set above them, and the loss would amount to more than the extra setting, burning and emptying cost of the 20 or 25 per cent. of unproductive material.

In setting difficult shapes made of fire clay or other clay by the method shown in the sketch, there is no unproductive material set in the kiln. The setting is a little slower and more difficult than straight material. Where the setting is done by piece work, it is economy to allow the setters a little extra for this work. The resultant higher percentage of good ware will be more than ten times the amount of this extra labor charge.

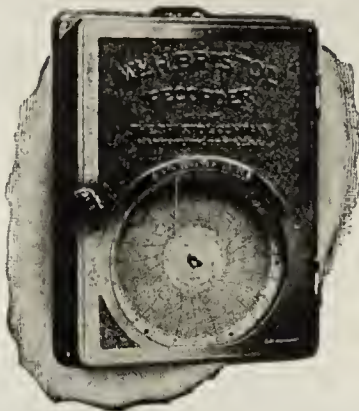
If there is a high loss of the corbelling or covering brick when set according to the sketch, an extra course or two or even three can be used for this purpose. Likewise if the shape is more than four or five inches thick, it would be advisable to use several extra courses of corbelling and covering.

✱ ✱ ✱

Correcting an Error

In Brick and Clay Record, issue of September 6, in the review of the production and value of clay products in 1920, the production of common brick in 1906 was given as twelve billion. This was a mistake and should have read ten billion brick.

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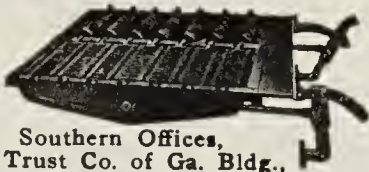
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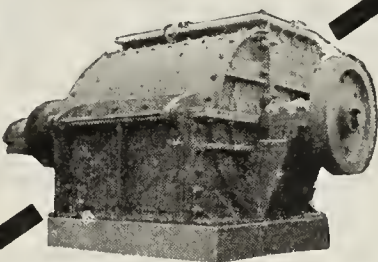
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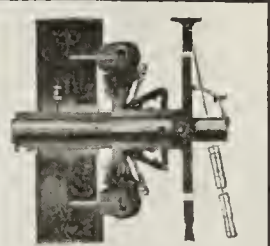
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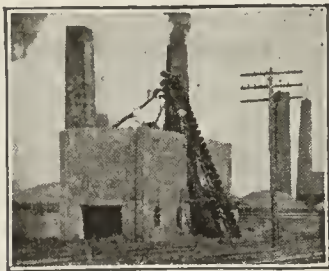
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Address all communications intended for this department to "Editor Questions and Answers," care of "Brick and Clay Record," Chicago.

Wants to Build Brick Coal Bin

995. Ohio—We want to build a coal bin to handle our coal, and were thinking of building same out of brick, something that will hold 200 tons of coal. We were wondering if you could give us any information on brick coal bins?

Any information that any reader can furnish will be very much appreciated. We do not know of any installation of this kind and have been unable to locate one.

✻ ✻ ✻

Burning Flower Pots With Drain Tile

989. Iowa—I have a friend who has a flower pot machine and a bunch of plaster of paris molds for molding pots; in fact, has all the equipment it takes to make flower pots. He has offered to sell the outfit to us for \$50. He is out of business and says he wants to get them out of the way.

Now we have a clay that burns a good red and is porous, and I understand that is about what is needed for a good pot clay. What we would like to know is will it be a paying proposition for us to fix up a part of our drying shed so we can make pots in the winter and at odd times and burn them in connection with our drain tile, or is the business overworked now? This is a new idea to me and I have never looked into the matter, so anything that you can tell us will be greatly appreciated.

In addition to the specifications for flower pots that you mentioned this material must be smooth on the inside.

Greenhouse owners desire this quality so that when they wish to remove the contents of a pot, they can do so easily. We doubt whether plaster molds for flower pots will produce ware that is sufficiently smooth on the inside. The ordinary flower pot is made in an iron mold and a core rotates while pressing the pot.

We doubt very much whether you can burn flower pots in connection with your drain tile. The pots have a thinner wall and if you place them in the top of the kiln, you will either over-burn them or under-burn the drain tile which you have in the bottom. Flower pots are usually burned in low kilns, and the ware is not set more than six or eight feet high. It might be possible to set the pots in part of the bottom of the kilns, if you cover them with slabs of fire clay, so that no weight would rest on the pots, and then set drain tile on top. Altho this is possible, we would not recommend it, and doubt very much whether or not it would be a success. The price per ton obtained for flower pots is much larger than for drain tile, but we do not know anything about the market in Iowa.

This question and answer appeared in our September 6 issue. Since then, Professor Paul E. Cox, head of the Department of Ceramics, Iowa State College, Ames, Iowa, has sent in the following letter:

"In the current issue of *Brick and Clay Record*, under the heading 'Burning Flower Pots With Drain Tile,' I note what seems to me to be an error in your answer to the inquirer.

"I spent many years with concerns that made flower pots in

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several ways and one very good way is to make flower pots with plaster molds. You have stated to the inquirer that flower pots so made are not smooth inside but this would depend on several conditions. The usual practice where plaster molds are used is to jigger the pots just as milk pans or butter pots are jiggered and as tea cups are jiggered. This process certainly produces smooth wares.

"However, I would say that it would be better to use the flower pot machines rather than the plaster molds and jigger, for the reason that while first cost is lower the upkeep of molds is large, and the production per machine lower where molds are used. It is probable that your inquirer would be able to profitably experiment with his outfit at \$50 and if the results justify he could then expand.

"I note that the inquirer signs himself 'Iowa.' The Department of Ceramics at Ames will be glad to assist him with advice if he will call. Of course it is for him to determine concerning the possible markets, but the department will be glad to advise him concerning the technical phases of flower pot making.

"I would also say that it ought to be possible to arrange to burn flower pots and drain tile in the same kilns if the market conditions warranted making such a combination in manufacturing. Big stoneware jars and small flower pots are commonly burned in the same kilns, in the cases where buff flower pots are made."

We have explained to Professor Cox the original answer we gave to the inquirer as follows:

We are glad to receive this friendly criticism of the answer which we gave in our pages. When we stated that we doubted whether flower pots could be made satisfactorily in plaster molds, we were thinking principally from a commercial aspect. The statement you make about making flower pots in a plaster mold on a jigger is certainly true, but it does not appear to us that under present conditions a man could make flower pots of such small sizes as three and four inches with an outfit of this kind and compete with the plants that have the up-to-date flower pot machinery. That was the idea we wished to convey when we answered the inquirer as we did.

We also agree with you that it might be possible to burn big stoneware jars and small flower pots in the same kiln where buff burning clay is used. The inquirer, however, especially states that his clay burns red, and we made the statement that we did as a piece of advice to put him on his guard against any possible trouble from burning ware of two thicknesses made of red clay in the same kiln. We based this statement on the fact that so many surface clays are so easily over-burned.



Desires to Open New Clay Mine

996. Kentucky—I am part owner of a tract of land in southern Indiana, located on the main line of the B. & O. S. W. railroad. In putting down a shaft for coal we passed thru a vein of fire clay, 11 feet in thickness, 24 feet below the sur-

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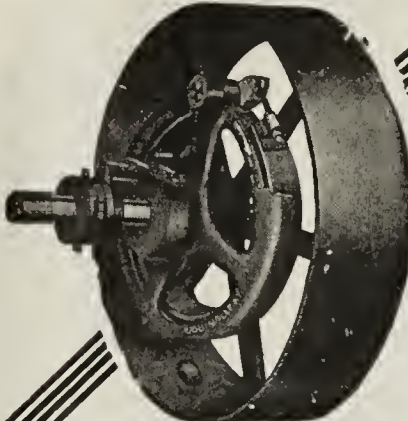
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face. In mining this clay you would have a vein of coal over it for a roof. The analysis of the clay shows it to be of good quality, as do the samples of brick and stoneware that were made of it. This fire clay is suitable for making face brick and number two fire brick, sewer pipe, tile, not drain, and all kinds of stoneware. Would it be commercially practical to mine this clay at a profit? Any information you can give me along the above lines will be appreciated.

At the present time we would discourage you in opening up any new fire clay mine. The mines and plants that are in operation at the present time are running at only 25 to 35 per cent. of capacity and naturally this would be a poor time for a new mine to succeed.

Many roofs of coal in a fire clay mine are hard to hold. Naturally this depends considerably on the thickness of the coal and whether or not there is any stone, shale or other good roof above the coal.

When business is normal, it is commercially possible to make a fair profit on the mining of clay of this nature for fire clay, fire brick, sewer pipe and stoneware. We doubt very much whether you could mine this clay cheaply enough to manufacture it into drain tile. Of course you might manufacture drain tile out of the surface clay and add a certain proportion of this clay, thereby making a good tile.

* * *

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Calls Statements of Prof. Beyer Libelous

In the September 20 issue of *Brick and Clay Record* appeared an item giving the results of tests made by Prof. Albin H. Beyer, of Columbia University, New York, on cement and concrete brick. This item also appeared in a New York newspaper and in it Prof. Beyer is quoted as saying that the results of the tests show concrete brick to be stronger than clay brick. The following is a letter which Ralph P. Stoddard, secretary, Common Brick Manufacturers' Association, has sent to Prof. Beyer, protesting that the item as it appeared in the New York paper is unfair to clay brick:

"Since there exists a fraternal feeling among the various associations in the construction industry and an unwritten code of ethics seems to control our efforts, I am greatly surprised at the cement story appearing in New York newspapers recently in the form of an interview with you. This is unlike most of the cement propaganda which invariably heretofore has refrained from adverse criticism of any competing material. For that reason I am taking the matter up personally with you, rather than with the cement association, because I do not believe that even the industry itself would want you to indulge in this sort of thing. You must be familiar with the methods of the Bureau of Standards and other authentic testing agencies, in regard to publications of data. A few tests hardly could produce a fair average and in the matter of the Bureau of Standards particularly they insist upon a complete series of tests before announcing results.

"To announce the results of a few tests of cement and clay brick without stating the mixture used in the cement brick or without reference to mortar joint and other important factors is exceedingly unfair and unwarranted, even by one holding prejudices for or against certain materials. There is no standard mix for cement brick that I am aware of at least, and it would, of course, be possible to make a cement brick that would be stronger than some clay brick, but to announce results of such a test with a sweeping depreciation of the clay brick is malicious.

"The story printed in the New York papers naturally has wide circulation and it will be copied by newspapers in other sections. The average newspaper man, as well as the average reader, is not well informed upon these matters, as you, of course, must be, and will assume that a test of New York made brick or Hudson River brick may fairly represent the brick of all parts of the country. This, of course, is not true; as a matter of fact, Hudson River brick are made by the soft mud process and develop a fair average strength. They are amply strong for any use. Yet common clay brick are made that would show a much greater strength in test.

"The bare statement resulting from your interview, which forms the heading of the newspaper article now before me, 'Tests Show Clay Brick Is Inferior,' is not only viciously unfair, but it is libelous. We have some data upon the strength of the cement brick and I can produce clay brick that will exceed them in test by 100 per cent. I would not think, however, of giving publicity to the fact and attempting to create the general impression that all cement brick are only half as strong as clay brick, yet that is exactly what you have done in your unfair statement. We have records in our office showing a variation in the crushing strength of individual brick from 195 tons per square foot, which by the way was a Hudson River brick, to 1,926 tons per square foot, which was a brick made in the western part of your state. If you are comparing cement brick with clay brick testing 195 tons per square foot and find the cement brick stronger, what would be the result of testing it in comparison with other clay brick more than nine times as strong?

"You have done the clay brick industry in the United States a great injury. Being a professor in a well-known university your statements will be accepted as reliable by many, at least they will not suspect you of injecting propaganda in your work. Instead of giving the public facts, you are giving only a fraction of the truth, which is the most vicious of falsehoods. We do not question your right to promote cement, but we deny your right to take advantage of your position and the publicity which you may easily secure to tear down an honorable industry.

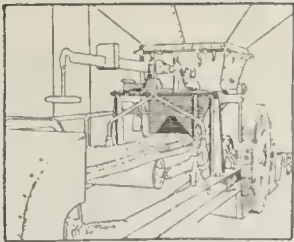
"Brick has a successful history of at least 6,000 years and has rendered and is rendering a valuable service to humanity. No substitute building unit has ever been devised which can develop the strength or fire resistance of a good hard burned clay brick. It for years has been the standard which other materials have been judged by. In all the annals of building construction it is practically impossible to find a failure due to brick. We expect there always will be substitutes trying to take away some of the business and we ask of them only that they be fair and honorable in their promotion.

"This you have not been, and in behalf of some 2,000 manufacturing companies in the United States I ask that you endeavor at least thru the same newspapers who published your interview to undo the harm. You should tell the proportion of the mix of which the cement brick is made; the method and time of its curing; the size and design of panel tested; the mortar used. You should also give the name and grade of the clay brick tested with corresponding information regarding panel and mortar. It might be that a mortar which would be best for a cement brick would not be the best mortar for a clay brick. It is only fair that the public should know that no representative of the clay industry was present at your test or had any hand in the selection of the brick or the building of the panels.

"I hope that you will see the injustice of your statement and will be willing to make a fair retraction, or at least tell the whole truth."

Not the least of the duties involving upon an association of brick manufacturers, is the watching and combating of unfriendly propaganda. Until the common brick industry had an association, a little more than two years ago, such an attack, as that made by Prof. Beyer, and given wide publicity in New York and other newspapers, probably would have gone unanswered.

As was pointed out by the editorial in the previous issue of *Brick and Clay Record*, there are many factors other than strength that enter into a comparison of the two kinds of brick. The Common Brick Manufacturers Association recently had occasion to write to a manufacturer of cement



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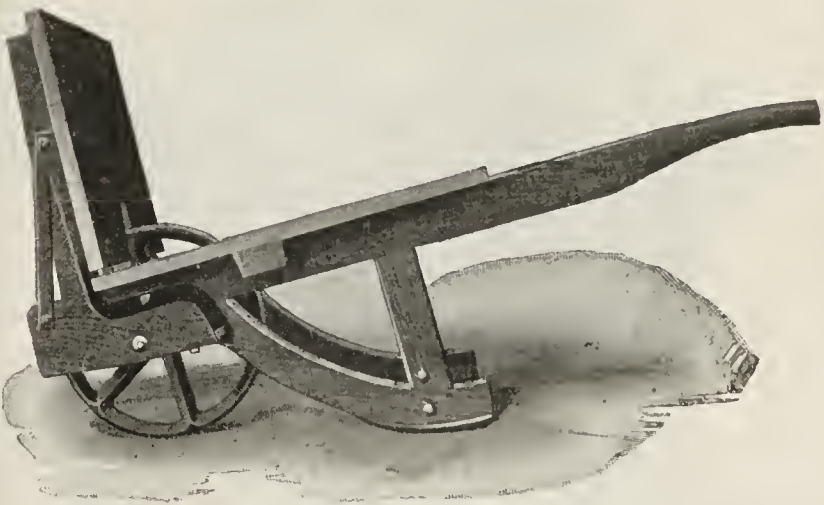


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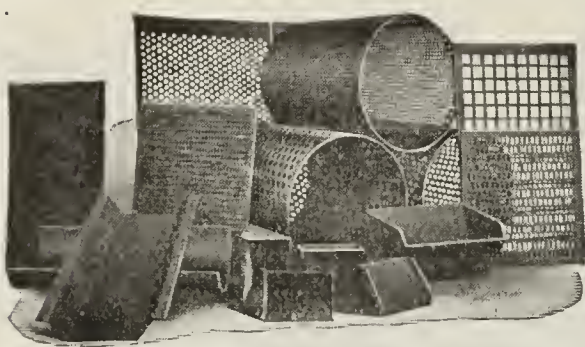
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brick machines, criticising his literature. It was packed with false statements and misrepresentations in an effort to sell machines to uninformed people. The manufacturer replied that he would let the statements stand whether they were true or not. He was concerned only with the selling of the machine.

It is the policy of the Common Brick Manufacturers Association to make such a vigorous kick whenever brick is unfairly attacked that the party making the attack will think a long time before doing it again. Meanwhile the association is trying to get its share of publicity on the favorable side of brick, which, after all, is the best answer.

* * *

IN *the* WAKE of *the* NEWS

Being Brief Mention of a Host
of Interesting Happenings in the
Varied Fields of Clayworking

Appoints Clay Man County Surveyor

Benjamin Hill, manager of the North Missouri Fire Brick and Clay Co. of Farber, Mo., has been appointed surveyor of Audrain County by Governor Arthur B. Hyde to fill a vacancy. Mr. Hill has gone to Mexico, Mo., to qualify for the place and enter upon his duties.

Visits Columbus for Hollow Tile Association

Engineer Osterburg, of the Hollow Building Tile Association, was a business visitor in Columbus, Ohio, late in September in the interest of furthering the use of that product. He called on a number of architects in the Buckeye capital.

Return from Washington Trip

J. L. Murphy, president, and G. K. Mitchell, traffic manager of the Nelsonville Brick Co., the Hocking Valley Brick Co., and the Ohio Fireproofing Co., have returned to Ohio from Washington, D. C., where they went to confer with the Interstate Commerce Commission on freight rates on brick and clay products.

J. T. Howington Entertains at Rotary Club

James T. Howington, of the Coral Ridge Clay Products Co., Louisville, Ky., was one of the chief entertainers at the annual Ladies' Night gathering of the Rotary Club, when the program included a style show, with a number of members showing the latest fall lines of clothing, etc., on living models, this being followed by a section of program in which the members wore decollete clothing, bathing suits, wigs, and so forth.

Death Takes S. C. Linbarger

Silas Carl Linbarger, for the past six years ceramic engineer of the Carborundum Co., Niagara Falls, N. Y., died at his home in that city, Saturday, September 10. Mr. Linbarger was born at San Jose, Ill., September 21, 1892, was graduated from the Champaign (Ill.) High School and the University of Illinois.

Altho a young man he was an authority in the field of refractories and abrasives. Among his patents was one covering a crucible of graphite, clay and silicon carbide,

used for melting metals. Mr. Linbarger is also the developer of carborundum saggers, which have proved very beneficial in the manufacture of fine ceramics. A number of other important discoveries are accredited to him.

Mr. Linbarger was also very active in the American Ceramic Society and at the time of his death was chairman of the committee on Sections and Divisions, and president of the New York State branch of this national society. With his knowledge of the industry and natural ability he would undoubtedly have gone far had he been permitted to live.

Clay Man Meets Untimely Death

Bartlett C. Peirce, treasurer of the Presbry Stove Lining Co., of Taunton, Mass., was instantly killed in Middleboro, Mass., on the morning of October 10, when he was struck by an automobile. Mr. Peirce had devoted the larger part of his life to the manufacture of stove linings and was recognized as an expert in his line. His many friends, both in the industry and outside of it, will be grieved to learn of his untimely death.

Complete Bungalow in Two Weeks

The Excelsior Brick Co., of Montgomery, Ala., recently made what is believed to be a record in the erection of a dwelling in that city. This company constructed, it is said, a seven room bungalow, completing practically all features, with the exception of the painting, in two weeks. F. E. Rhodes is president and general manager of the company.

Shipping 15 Cars Sewer Pipe Daily

The Southern Sewer Pipe Co., of North Birmingham, Ala., is operating full time, and is shipping 15 cars of clay sewer pipe daily to various points in Alabama, Georgia, Mississippi and other Southern states. This company owns and operates its own clay pit near Warrior, Ala., only a short run from Birmingham. It is also making large quantities of hollow building tile, which are being used extensively thruout Alabama and other states for the building of houses.

This plant is owned by Col. Dickey, of Kansas City, Mo., and is said to be the largest independent clay pipe works in the United States, if not in the entire world. Its products are shipped to a half dozen Southern states. It has never been closed down on account of the present financial depression, but has kept right ahead, giving employment to over 200 men on full time.

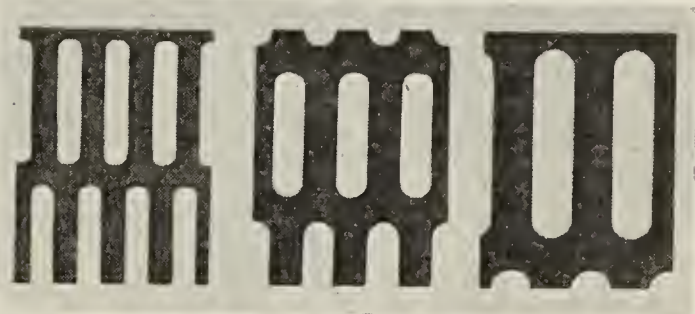
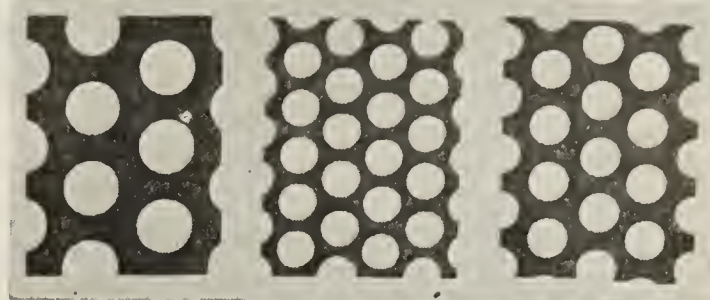
Birmingham Showing Marked Business Gains

The past ten days or two weeks have shown a wonderful improvement in the brick and clay pipe industries in the Birmingham, Ala., section. At the present time almost all of the plants which manufacture brick and clay pipes are in operation, either on full or part time.

Creed Lawson, president of the Birmingham Brick Co., said: "The fall business, both in face and common brick, is coming strong. After having our plant closed down for the past several weeks we have again resumed operation and have sold the large stock of brick which had accumulated in our yards during the dull summer months.

"We are finding a good market for brick, and are hard pressed to keep up with the delivery of brick by trucks, in Greater Birmingham, as the orders are coming in at such a rapid clip. The demand is decidedly strong. Being inside of the city limits we are enabled to deliver brick in Birmingham on short notice. The result is that present business activities keep us on the move all the time."

Perforated Steel Screens



For Screening Clay, Shale, Sand, Gravel, Stone and Cement

All sizes and shapes of holes in metal of proper thicknesses to give the best screening results.

Sheets furnished flat or rolled to shape for revolving screens.

THE HARRINGTON & KING PERFORATING CO.

635 N. Union Ave., Chicago, Ill.

NEW YORK OFFICE: 114 Liberty St.

Buy "signed" valves
—with the Jenkins
Diamond Mark and
signature on the
body.

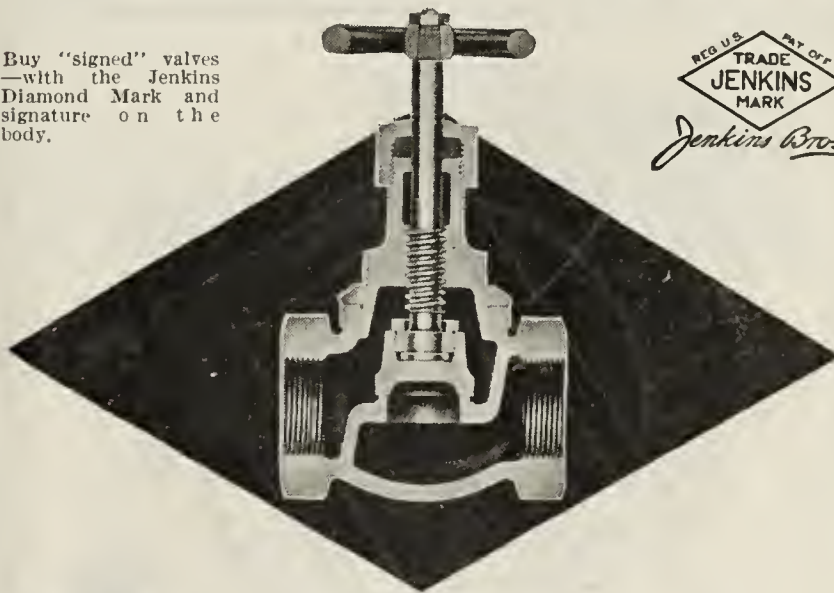


Fig. 75
Globe Screwed

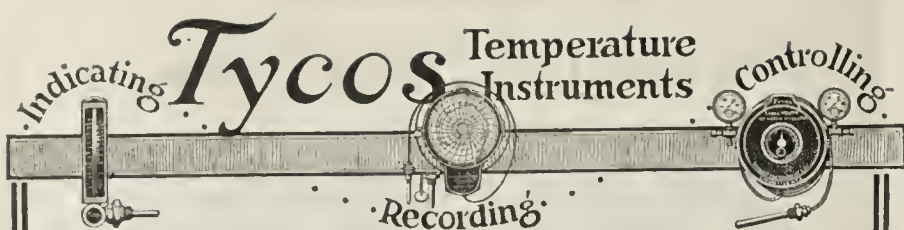
All Iron Valves

Suitable for a variety of purposes including the handling of solution of cyanide, saltpetre, caustic potash, dye-stuffs, and various acid and alkaline fluids. Regularly made with solid iron clapper, but when so ordered can be furnished with iron disc holder and renewable Jenkins Disc. Suitable for 175 pounds working water pressure. Made globe or angle, with screwed bonnet or with yoke.

JENKINS BROS.

New York Boston Philadelphia Chicago
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Elizabeth, N. J.; Montreal, Canada.

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SINCE 1864



MANY YEARS OF UNTIRING
EXPERIMENT AND CAREFUL
MANUFACTURE BY LIFE-
TRAINED OPERATORS HAVE
RAISED THE PRESTIGE OF
TYCOS TEMPERATURE IN-
STRUMENTS TO THE HIGH-
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Purpose* 752½

**For Every
Brick and
Clay Plant**



THE NEW CATALOG

This new catalog contains over one hundred pages of invaluable engineering and mechanical information relative to advanced belt conveyor practice. Technical data is submitted in graphical and tabular form, supplemented with concise descriptions of equipment. Within the pages of this catalog are described and illustrated the latest developments in correct belt conveyor design.

Copies of this limited edition will be distributed to our customers and prospective customers. Send request on your business stationery.

STEPHENS-ADAMSON MFG. CO., Aurora, Ill.

New California Organization

The Superior Tile & Products Co., of Berkeley, Cal., has been formed by Charles Dickens, Charles Keeler, R. B. Bell, H. M. Pugh, B. E. Nelson, Stanley B. Harvey, and Galt Bell, with a capital stock of \$250,000 to manufacture and deal in cement, brick, etc.

To Make New Brick in California

John J. Roth, head of the Home Builders' Department of the city of Atascadero, Cal., announced recently that he thought it very probable that a new kind of brick will be manufactured in the vicinity of Atascadero from sand in the Salinas River. Mr. Roth has been experimenting with Salinas River sand and had it tested recently in brick laboratories in St. Louis. According to Mr. Roth the tests showed a higher breaking and crushing strength and less porosity than the ordinary pressed brick.

California Company Starts Capacity Work

Stock in the California Pottery Co. at Merced is now on sale and a lively interest has been shown in the enlarged plant since it began operations September 19. Manager Forde of the company stated recently that the Merced works would be in full operation before the end of September and that when the plant is in operation it will carry a payroll of about \$200 per day. Improvements to the extent of approximately \$60,000 have been made during the last few months. The people of Merced have taken a keen interest in the expansion of the brick industry and a general celebration took place at the plant attended by many friends and visitors as well as employees and their families. High pressure tests made of the brick and tile of the plant have shown excellent results. Frank Costello, of San Francisco, is president of the company.

Buys Denver Shale Brick Co. Plant

The plant of the Denver Shale Brick Co., Arvada, Col., has been purchased by E. J. Bruderlin and a Mr. Morris, and Mr. Bruderlin has already taken charge. Mr. Bruderlin was a construction engineer for the Ohio & Colorado smelter and later was superintendent of a smelter at Monterey, Mexico. When business became slack in this line he decided to enter the field of clay products manufacturing.

Contemplating Rebuilding

The Columbus (Ga.) Sewer Pipe Co., manufacturer of vitrified sewer pipe, is considering the rebuilding of the portion of its plant recently destroyed by fire with loss estimated at about \$75,000, including equipment. Judson C. Buchanan is general manager.

Brick Plant Employees Take Ten Per Cent. Cut

To stimulate trade in face brick, the Western Brick Co. at Danville, Ill., has taken steps to reduce the cost of its product. The first step to this end was taken when 450 employees of the company voluntarily agreed to a ten per cent. cut in wages. The company has agreed to keep the plant in steady operation if the employees would consent to the cut, it is said.

Changes Location of Offices

The General Clay Products Corporation has found it advisable to establish its main office at the company plants at Belleville, Ill.

Work Again the Order of Day

News has been received that the Standard Brick Co., of Crawfordsville, Ind., which has been down since spring, has

resumed operations and is now running to full capacity. It is hoped that it will be possible to continue operations thruout the season.

Paints Brick Wall on Truck Body

The Progress Pressed Brick Co., of Louisville, Ky., is using a unique truck body in its local delivery, the body of the truck having been painted in red, crosslined to represent a section of brick wall. It makes a very attractive appearance, and is a brick advertisement that "packs a punch." Plans are being perfected for the erection of an addition to the plant for increased production. Equipment will be installed to allow for doubling the present output of 25,000 brick per day. A. P. Hildebrand is president.

Expect Much Sewer Pipe Business

The P. Bannon Pipe Co., Louisville, Ky., reports that it is operating at full capacity in its sewer pipe and also the hollow building tile plants, demand having been very active for some weeks past. The company is anticipating a good deal of sewer pipe business when bids are awarded on a tremendous quantity of road work in the state, which is to be announced within a few days. P. Bannon, of the company, said: "The largest volume of road work probably ever let in the state is due very shortly, and we believe we will get a great deal of sewer pipe business out of it."

Mean Burglars Steal Employee's Shoes

Burglars paid a midnight visit to the office of the Saco Brick Company at Saco, Me., recently and got away with about \$20 in cash, two pairs of new shoes and two pairs of new rubber boots. The footwear was part of a stock which the company kept on hand to sell to employees.

Doing Big Business

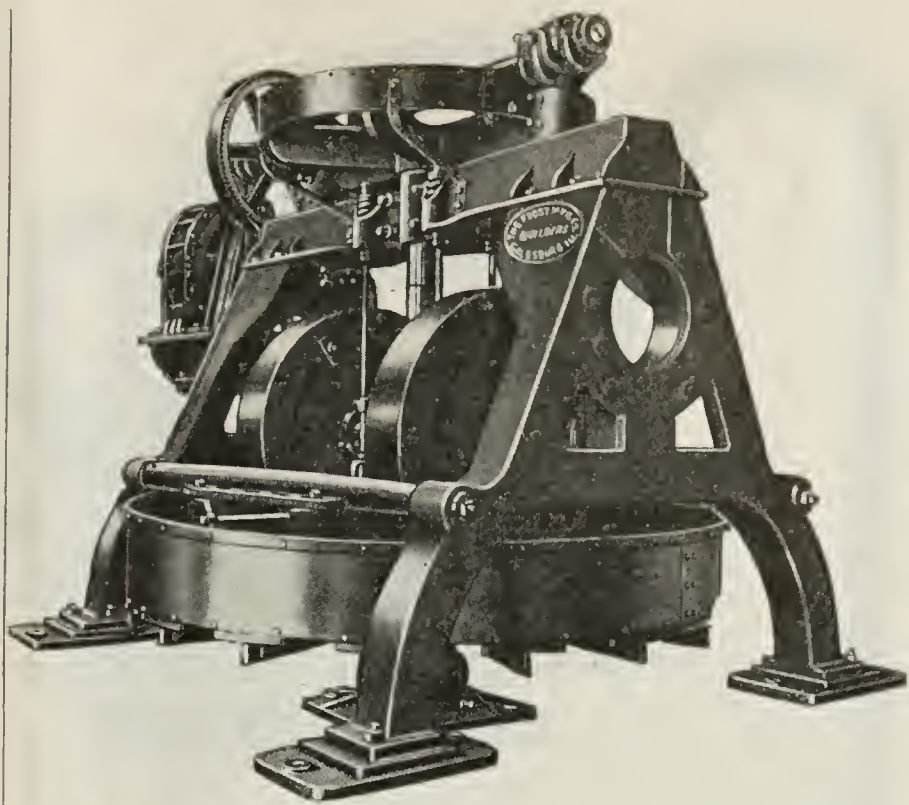
A very satisfactory business is reported by the Briggs Co., of Lansing, Mich., for the month of August, at its face brick plant. A total of more than a million brick was shipped and an average of 43,000 daily was manufactured. During October the company expects to reach the capacity of 50,000 brick per day. Unfilled orders for over 900,000 brick are on hand and more are coming in daily.

Furnishing Brick for Seven Schools

The A. C. Ochs Brick & Tile Co., of Springfield, Minn., has started to manufacture face brick in order to run one of their plants to full capacity. They formerly specialized in common brick and hollow building tile. They have received orders for the face brick for seven large school houses, two of which will cost \$500,000 each. These are located at Mankato and Watertown, Minn.

Showing Good Increases

J. B. Arthur, secretary, and George E. Ford, Chicago representative of the A. P. Green Fire Brick Co., of Mexico, Mo., were two visitors at the offices of *Brick and Clay Record* recently. They stated that their business for August showed a good improvement over July, and that up to date the month of September also showed a good increase over August. Another of their long distance shipments, consisting of 55,000 brick, will shortly be sent to the Philippine Islands. The plant is now operating five days per week. This company has enjoyed an extensive export business during the past few years with Cuba, Porto Rico and the Dominion Republic.



DO YOU KNOW?

That Frost Pans aim to give you the best quality of material, workmanship and fabrication that can be obtained.

SEND US YOUR INQUIRIES
THE FROST MFG. CO.
GALESBURG, ILLINOIS.
ESTABLISHED 1851



Get the full capacity out of your dry pan and pug mill auger

—insure regular deliveries to your off-bearers—keep them busy—speed up the efficiency of your plant—have your clay properly tempered, thus improving the quality of your ware—save labor, time and money.

Do these things all at once by installing the Marion "Rust Special" Feeder and Mixer.

Write for catalog describing the full line of MARION Clay Plant Equipment. No obligation to buy, but money in your pocket, if you do.

Marion Machine Foundry & Supply Co.
P. O. Box 395
MARION, INDIANA



**Dryer, Transfer and Clay Cars,
with Flexible Bearings.
Switches, Turntables and Track.**

THE CHASE FOUNDRY & MFG. CO.
COLUMBUS, OHIO

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WHAT METHOD DO YOU USE?

This question when applied to the manufacture of Stiff Mud Ware deserves consideration.

The Modern Way is the Right Way

THE ROLLER PRESS for all clays, shales, fire clays, surface clays, short bonding clays and laminating shales and clays.

Brick, Hollow Ware, Roofing Tile, Floor Tile and Drain Tile can be made on the ROLLER PRESS.

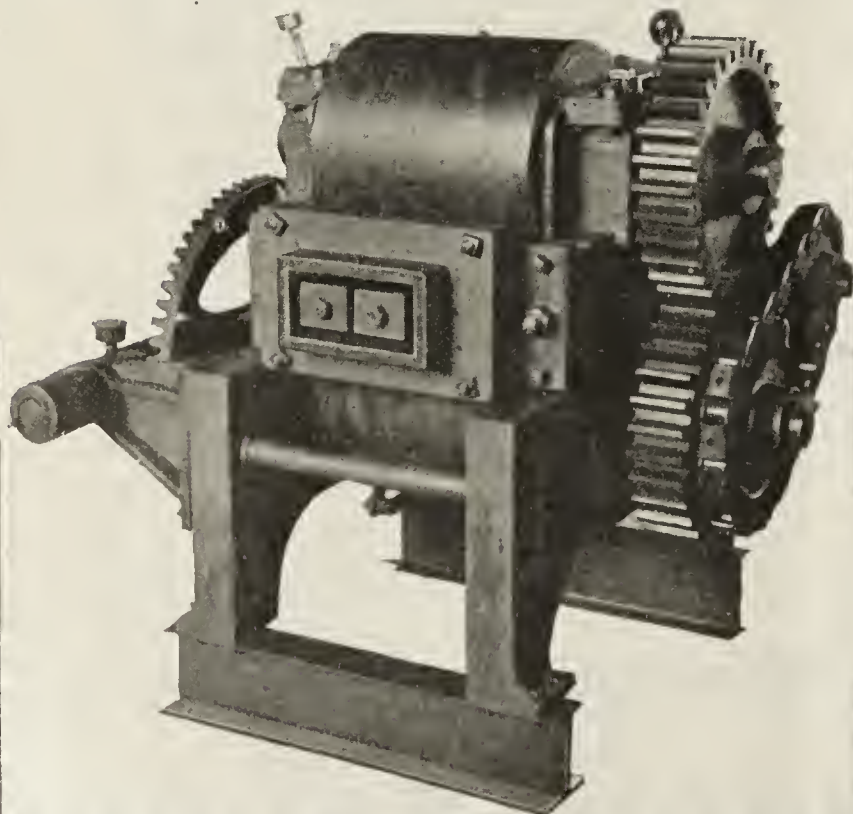
Start now to solve your production problems.

CLAYCRAFT SERVICE COMPANY

503 Wainwright Building

St. Louis, Mo.

Everything for the Clayworker.



Hollow Tile Plants Active

Following the resumption of operations at its Standard plant at Keasbey, N. J., the National Fireproofing Co. has arranged for substantial production at its various plants in the Raritan River section. For the time being, the Standard works will operate on a basis of 50 per cent. of normal. The Perth Amboy factory of the company will manufacture standard hollow tile shapes at full capacity until further notice, while the Lorillard plant of the company, recently opened, will engage at a point of about one-half of normal for the present.

To Manufacture Abrasives

The Abrasives Sales Corporation, New York, N. Y., has been organized under state laws to manufacture and deal in abrasive products. The company is headed by J. W. and A. P. Ticknor, and W. E. Hawkins, 30 Church Street, New York.

Bright Outlook for Haverstraw Manufacturers

It is estimated by brick manufacturers in the Haverstraw district that at the rate brick is now being consumed in that section the demand will exceed the supply made in the New York territory. About 150,000,000 brick are being sold per month.

Starts Work After Being Idle For Six Months

After a shut down lasting six months the Minor Fire Brick Co., at Empire, Ohio, is again working. Indications point to a general resumption of activity in that district and it is believed that other plants will soon start up.

Fire Brick Plant Working Part Time

The Columbia Fire Brick plant at Strasburg, Ohio, has been working five days a week for the last two months, following completion of a steel tipple and repairs. The tipple cost \$2,500.

Starts After Ten Month Shut-Down

The Hinde Brick & Tile Co., Sandusky, Ohio, has resumed production at its plant following a shut-down for the past ten months. It is expected to maintain operations for an indefinite period. A portion of the present output will be stocked for reserves.

Furnishes All Clay Material for 3 Churches

The Franklin Brick & Tile Co., of Columbus, Ohio, calls attention to the rather unusual occurrence that the company is delivering brick on five church projects, on three of which all of the face brick, common brick and backup tile are being furnished by the company.

Opening Bids for Paving

The Ohio Department of Highways and Public Works, formerly the Ohio Highway Commission, will open bids early in October for several bridge jobs, two small paving jobs and several grading jobs. But Commissioner Leon C. Herrick announces that no further highway contracts will be awarded by his department until the question of freight rates on road building materials is settled. A reduction of approximately 25 per cent. is expected by state officials.

Ohio Drain Tile Assn. Wants Rates Reduced

A committee representing the Ohio Drain Tile Association appeared before the Ohio Utilities Commission at

Columbus recently urging a reduction of freight rates on that product. The committee consisted of Leo Childs, of Findlay; Harry Landrum, Columbus; R. S. Dingleline, Columbus, and J. C. Poling, Ada. After submitting some evidence showing the unreasonableness of rates on drain tile the hearing was postponed until October 24.

Columbus Prices Stable

Prices for both face and common brick in Columbus and central Ohio territory are more stabilized than for some time. Formerly constant reductions were made and there was a good deal of variation. Now prices are pretty well down and few changes are reported. Face brick sell for \$23 to \$35 delivered, depending on the quality, shade and texture. The common brick market is pretty well liquidated with sand mold brick selling at \$15 delivered, and shale brick at \$17 delivered. Little change from these prices is expected in the immediate future.

Cleveland Company Gets Massachusetts Order

That interests distant from Cleveland, Ohio, are not disposed to overlook what that city has to offer in the way of unique materials for building construction, is indicated in the placing of an order this week by county commissioners at Malden, Mass., for 100,000 "Royal Bokharas" face brick of the Hydraulic Press Brick Co., which will be used in the new court house at Malden. The material was sold thru the Hydraulic's Boston representatives, Waldo Bros. & Bond. Nearer to home the Hydraulic has taken the order for 50,000 smooth reds for the Kirby Garage, a structure to be built adjacent to the Rockefeller Building, wherein tenants may keep their cars during business hours.

Prices on Road Materials Reduced

Road material interests having representatives in Ohio did not wait for the railroads to reduce their freight rates on road building materials, as was announced at a recent hearing before the Ohio Utilities Commission, but they made their reductions recently. Meanwhile the commission has not yet rendered its decision as to reductions in freight rates. The Greenville Sand & Gravel Co. reduced its prices on both sand and gravel, approximately 25 per cent., while cement manufacturers made a reduction in the price of cement amounting to 15 cents per barrel. The reductions are expected to stimulate highway work and street improvement in the Buckeye State.

Refuse to Build With Prison Products

The state manufactured paving brick which are known as "prison brick," are not acceptable to contractors as a rule was the statement made by Leon C. Herrick, Ohio State Highway Director when called as a witness in the hearing in the ouster proceedings of Franklin County against the C. D. & M. Electric Co., because of the refusal of the inter-urban line to shift its tracks from the side to the middle of High St., north of Columbus, Ohio. Director Herrick testified that it would require 51,780 square yards of brick pavement to make the improvement on the street. He claims that contractors advised him that if they were compelled to use prison brick they would not bid on the road improvement project.

To Erect \$1,500,000 Building

A ten-story hotel, theater and office building, costing more than a million and one-half dollars, is to be erected this fall

Foley Traction-Rims deliver cement tile

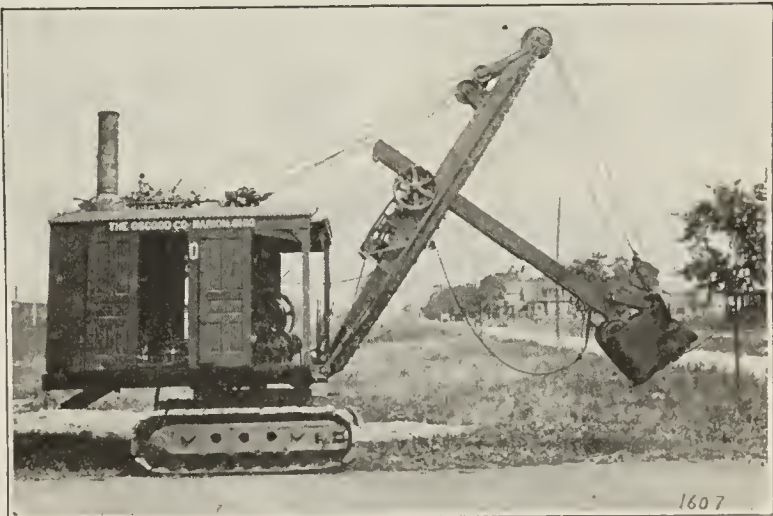
"We have used your traction-rims eighteen months on a Republic Number 12, two-ton truck. We are very much pleased with the service given and would not think of trying to get along without them. I have recommended them very highly. Our work consists of delivering tile from railroad stations to ditches and distributing same where possible to go with trucks, meaning much field work and short going."

CEYLON CEMENT TILE CO.,
Tyler, Minn.



Rims quickly and easily applied to any wheel with solid or pneumatic tires. They make traction easy on soft roads. Write for circular and prices. These rims pay for themselves in a short time.

FOLEY TRACTION RIM COMPANY
1311 Hennepin Ave. Minneapolis, Minn.



Demand the BEST
and it will always be

OSGOOD

Liberal Dimensions,
Sturdy Construction,
Ample Power,
Long Life.

Revolving and Railroad Type
Steam Shovels 3/4-6 cu. yds.

The OSGOOD Company, Marion, Ohio U. S. A.

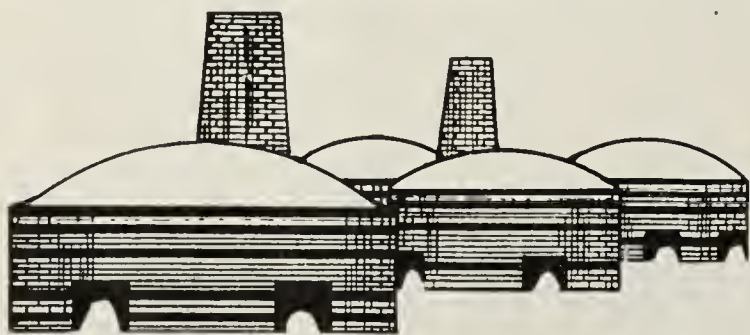


**HY-GRADE MANGANESE CO.
WOODSTOCK, VA.**

**Miner
and
Grinders**

**Especially Prepared
for Brick Making**

Sales Office: CHARLESTON, W. VA.



Robinson's Kiln Bands

are built for quality. They are made to give the clay products manufacturer long and satisfactory service.

This is true of all Robinson Clay Plant Equipment, including Dryer Cars.

*Write for our latest catalog.
No obligation.*

FRANK H. ROBINSON
Dryer Cars and Clay Working Equipment
Factory and General Office, Pittsburgh, Pa.

on the northeast corner of Cleveland Avenue and Third Street, N. W., in Canton, Ohio, by a building corporation formed by John A. Calhoun, president and general manager of the Continental Clay Co., 206 Zininger Building, Cleveland Avenue, N. W.

Articles of incorporation have been filed with the secretary of state and the awarding of a charter is expected very soon.

The building will be fireproof, the materials used being structural steel, reinforced concrete, terra cotta, brick and tile. The brick and tile will be manufactured by the Continental Clay Co.

Fight to Use Brick on Canton-Dover Road

A fight to determine the kind of paving material to be used on the Stark County stretch of the Canton-Dover road in Ohio, is now being waged. Plans for the road had been completed and approved by the state for the use of brick in paving a section of less than a mile from East Sparta to the county line. State Highway Commissioner Leon C. Herrick believes that better bids can be obtained if other material is used, and he has written the commissioners to this effect.

"We will not accept any other form of construction than brick," said Commissioner Jackman. "The road is paved with brick all the way from Canton to East Sparta and we do not want other material used for the little section which remains to be improved. The letter from Mr. Herrick is an indication of the pressure being brought to bear on the state department by material men in their fight on the brick makers."

Refractories Plant Resumes Work

The Superior Silica Brick Plant at Port Matilda, Pa., resumed operations August 29, after a shut down of several months' duration.

Beaver Falls Plant Starts

Operations were resumed last week at the plant of the Darlington Brick Co., at Beaver Falls, Pa., on an 11-hour basis. The company has recently completed extensive repairs and alterations to its plant.

Clay and Brick Company Organized

The Commercial Contracting Co., Philadelphia, Pa., has been formed under Delaware laws to manufacture brick, tile and other clay products. The incorporators are E. M. McFarland and F. R. Hansell, Land Title Building.

Must Build \$50,000,000 Worth of Hotels

"Before the Exposition of 1926 is opened, Philadelphia must build \$50,000,000 worth of hotels," said the manager of one of the leading hotels of that city recently. He added to his comment that the modern traveler is not content to put up at any place which offers a roof over his head but wants the conveniences and comforts to which he is accustomed at home.

\$50,000,000 worth of building in four years in one class of structures alone, and a type in which the brick and clay products manufacturer is sure to have his hand, is pleasant to contemplate.

Crack Brick Company's Safe

A safe in the office of the Van Ormer Brick Co., of Pitcairn, Pa., near Pittsburgh, was blown open by safe crackers Saturday night, September 3, and \$57 taken. The yeggs gained admittance by forcing the front door of the office. The robbery was not discovered until Monday morning when employes of the company reported for work. County detectives were notified and are conducting an investigation.

Hardships for Paving Brick Man

Manufacturers of paving brick have, besides almost prohibitive freight rates, an additional factor to contend with in the Pittsburgh, Pa., district, of which nearly all parts are easily accessible from one of the three local river valleys. Sand and gravel is being dredged from the beds of the three rivers and trucked directly to road construction projects operating against the construction of brick roads both in cheapness of cost and in convenience.

Paving Materials in Greater Demand

Continued improved operations are obtained with the Metropolitan Paving Brick Co., and Bessemer Limestone & Cement Co., both catering to the road and building construction interests.

The Metropolitan Paving Brick Co. has resumed operation of a unit at its Bessemer, Pa., plant which has been idle for fully one and one-half years. This action places the Bessemer plant in full commission and adds about 100 men to the pay roll at that point. A representative of the company says demand for paving brick has shown marked improvement of late and that the outlook is for good run of business.

The cement plant of the Bessemer Limestone & Cement Co. in August even exceeded the July record production. August shipments were also at a new high level, approximately 100,000 barrels, preliminary forecasts indicate, with production for the month about 90,000 barrels.

August earnings of the company exceeded those of the preceding month, as did those of July and June earnings. Earnings naturally advance with increased output, it was pointed out.

The situation with these two companies reflects the trend of developments in various kinds of construction. Officials of the companies are optimistic that still further improvement is ahead.

Knoxville Will Have New Plant

The Riverside Brick & Tile Co., of Knoxville, Tenn., has been formed by J. N. Dooly, R. P. Black, B. C. Ogle and R. L. Pope with a capital stock of \$40,000.

Building Kilns and Installing Machinery

The Jellicoe (Tenn.) Fire Brick Co., recently incorporated for \$100,000, is increasing kiln capacity and installing machinery to manufacture first class fire brick, buff face brick and common brick. The company has a large deposit of fire clay and shale. Nature has given this material all the properties to manufacture the best of impervious face brick and will produce the best novelty colors. Being close to the southern states, this company can furnish brick in short notice. The officers and directors of the company are: Peter Zechini, president; Z. D. Baird, vice-president; Frank L. Smith, secretary and treasurer; U. S. Jones, director, all of Jellico, Tenn. H. G. Fowler, of Knoxville, Tenn., is attorney and director; and Wm. Hensley, of Brazil, Ind., is general manager.

Texas Plant Reopens

The Acme brick plant, of Denton, Texas, has resumed operations after a shut-down of several months. A crew of thirty men was put to work by Manager A. B. Kelley, and he expects to increase the number to about seventy-five men.

About 3,000,000 brick will be made to fill in the stock kept on hand, and if business picks up in the meantime, operation will be continued. It will take about three months to make the 3,000,000.

The One Man Digger



is cutting clay costs for many operators.

Light, economical, self-propelling. Track or caterpillar type mounting, gasoline or electric power. One man and the Bay City Digger will displace a dozen men. Always ready — rain or shine. The low price and operating cost enables the small operator to install this labor saving machine.

Write for particulars

BAY CITY DREDGE WORKS
2613 Center Avenue Bay City, Michigan

REEVES



Two 135-H. P. Units

GAS ENGINES

For Belt Drive or Direct
Connection to Generators

If in need of power and located in natural gas district, or if your power costs you over $1\frac{1}{4}c$ Per K. W. Hr., write

Hope Engineering & Supply Co.

Pittsburgh, Pa. MT. VERNON, OHIO Tulsa, Okla.

PEABODY COAL COMPANY

FOUNDED 1883

OPERATING 36 MINES
WITH ANNUAL CAPACITY
OF

18,000,000 TONS



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KANSAS CITY, MO.		SHERIDAN, WYO.

"PEABODY FOR SERVICE"

The Spirit of 1921 "Lower Production Costs"

Associations in the Clay Working Industries have adopted this slogan.

Every Clay Manufacturer should have a copy of "Clay Plant Construction and Operation," in his library. It is a timely text book containing a wealth of practical information on Labor Saving equipment, efficiency methods, etc.

The price of this handsomely bound volume is \$4.00 prepaid.

You can't afford to be without a copy. Send for it today.

Brick and Clay Record

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MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

New Quarters for Quaker City Rubber Co.

On November 1st, the Quaker City Rubber Company, manufacturers of Daniel's P. P. P. Rod Packing, Ebonite Packing, Ironsides Rubber Belting, and a complete line of Mechanical Rubber Goods, will move into their new, modern Quaker Building, 624-26-28 Market Street, Philadelphia.

This company has been located on Market Street for considerably more than a quarter century, and this new building will house the main offices and salesrooms. It is the culmination of continual growth and success enjoyed by this prominent rubber company since its beginning.

The new building, which is just across the street from their old address, is the latest in builders' art. Large plate glass windows with ample depth for display purposes are on the street floor. The exterior is of Indiana limestone and tapestry brick. The interior equipment has been selected for efficiency and comfort, and consists of high speed electric elevators; vacuum steam heating system, thermostatically controlled; lighting, plumbings and all interior fixtures modern in every respect.

Well appointed offices for the executives and clerical force have been planned and laid out that makes possible the highest efficiency in the daily work, while ample space for shipping and receiving materials has been provided.

In addition to mechanical rubber goods, including belting, this enterprising company is also the manufacturer of the Trusty Friend, Quaker Cord "Miles Cheaper" Tires and Multi-tubes.

The Quaker City Rubber Company extends a cordial invitation to its many customers and friends to visit them in their new building.

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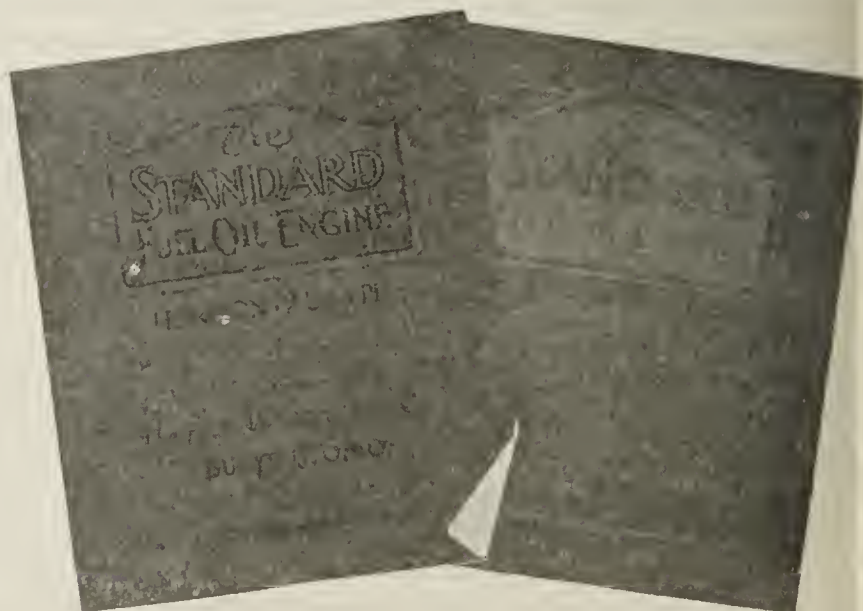
Fuel Oil Engines

The Hadfield-Penfield Steel Company, Bucyrus, Ohio, have issued two catalogs describing and illustrating their Diesel Type Horizontal and Vertical Standard Fuel Oil Engines. The engines are built on the two-cycle principle with a cross head which also serves as a pumping piston for furnishing air to clean out and fill the main working cylinder.

The Horizontal Engine is built in three sizes of cylinders and of 50, 75 and 100 B. H. P. The latter two sizes being built as Twin Units, giving 150 and 200 B. H. P.

The Vertical Engine is built in two cylinder sizes—50 and 125 B. H. P. per cylinder and in from two to six cylinder units.

The Hadfield-Penfield Steel Company are well known in the clay-products industry as manufacturers of every kind of clayworking machinery.



COKAL HAND STOKERS

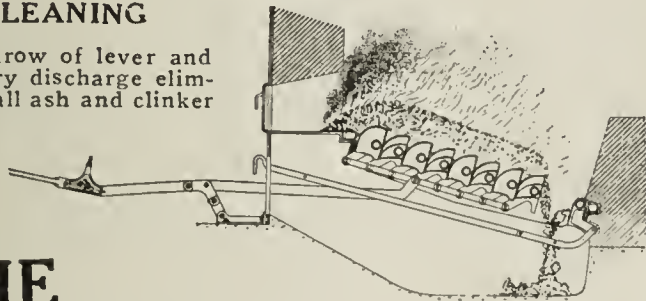
Insure you more steam with less coal, less labor and no worry.

The day is fast approaching when every straight or shaking grate will be replaced with a hand stoker.

Are you going to continue to lose money until you are forced to it by the other fellow's lower production costs, before you install this money saving stoker?

CLEANING

Full throw of lever and auxiliary discharge eliminates all ash and clinker at rear.



THE COKAL

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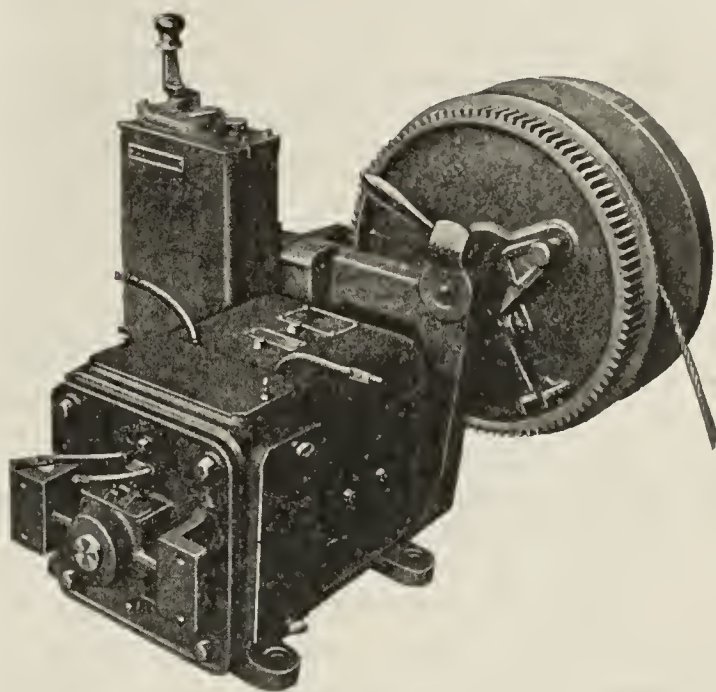
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(Continued from page 511)

moment, either, but appear entirely sufficient for anticipated demand. The New Jersey fire brick markets are operating under reduced call, owing to the curtailment of industrial work. At Newark, first grade material is selling at \$70 and \$75, while at Trenton one of the local manufacturers is holding to a figure of \$80, delivered. It is said that first grade fire brick cannot be made and sold for a smaller amount. Fire clay varies from \$17 to \$20 a ton, according to locality. Face brick is being distributed at quotations ranging from \$40 to \$53.

ADVANCES AT PHILADELPHIA

With advancing construction operations at Philadelphia, Pa., there is a marked increased call for brick and other burned clay building products. Common brick is being sold by local producers at \$20 a thousand, delivered, while out-of-town stock is being held as high as \$22 and \$23, in different instances. The Philadelphia brick yards are maintaining a fair degree of activity, and will continue to manufacture in accordance with call thruout the winter months, according to present indications.

Face brick is developing a more active market in this section, particularly reds, used in large quantities for the commonly termed "Philadelphia" houses. Material of this sort is priced from \$42 upwards, while grays and buffs, and mingled material are priced at levels from \$45 to \$55, delivered. For finer work, the latter are in demand. A good grade of fire brick is procurable in the local market at \$75, with \$85 quoted for particularly high-grade stocks. Partition tile varies from \$140 a thousand upwards, according to size.

INCREASED ACTIVITY AT BALTIMORE

According to the records of the Baltimore building department, there is more construction in progress there at the present time than at this period a year ago, and more than twice the volume that prevailed in this season in 1914. Dwelling construction is becoming a feature of local operations, and the month of August showed a total of 139 permits issued for structures of this character, valued at \$711,000, as against 62 permits, with valuation of \$322,000, in the corresponding month of a year ago. Building costs are estimated to have decreased from 20 to 25 per cent. as compared with the high levels of 1920.

The Baltimore building material market has a firm tone. Burned clay products are holding at present levels, without indication of change. Common brick is selling at prices varying from \$22 to \$25 a thousand. Face brick is quoted at \$40 upwards, and regular commercial fire brick is priced at \$75.

Manufacturers of brick and back-up tile and terra cotta in Pittsburgh, Pa., are considerably encouraged by developments in the building situation in the past two weeks. It is reported that \$20,000,000 of building materials of all kinds have been purchased by contractors of the district and that heavy orders are being placed for immediate delivery.

\$100,000,000 BUILDING PROGRAM FOR PITTSBURGH

Pittsburgh's building program, involving in the neighborhood of \$100,000,000, will be under way within six weeks, according to a member of the Pittsburgh Builders' Exchange. The statement was made following the announcement that the carpenters' union had signed an agreement with contractors to extend thru a period of two years. With this as an entering wedge, it is predicted that the strike-lockout of the building trades unions which has tied up building projects since June 1, would be completely broken within two weeks.

Already ground has been broken for an annex to one of the city's largest department stores to cost more than \$1,500,-

000 and the board of public education has authorized immediate construction of three new schools to cost about \$2,000,000. Many other large projects are in the course of preparation or are ready to be started. Among these is the erection of four synagogues, tentative plans for which are being considered by as many Jewish congregations of the city. In view of the revived demand it is expected that many of the more than five per cent. of brick and tile plants in the district now idle will resume and that prices will strengthen materially.

CLEVELAND SITUATION UNCHANGED

Little change in the building situation in the northern Ohio territory is noted by Cleveland brick and clay products interests as the turn of the month into real fall weather arrives. Likewise there can be no question but what those firms can truthfully answer the question: "How do you find business?" with the answer: "By going after it." At best only small orders are being booked, however. Considerable residence work is going on and in prospect, and bulked these will make a comfortable total for the brick and supply factors.

The prospects of buyers or the building public realizing lower prices on brick or other clay products in the building supply field, thru the balance of this year, at least, are poor. Leaders in the trade here point out that prices are approximately half of what they were at the peak a year ago, and that the now comparatively low level is here to stay for a while anyway.

MUCH SCHOOL BUILDING STILL TO BE DONE

The best offerings in outlet for material right now are the numerous school and other public projects, which city and county officials seem only too willing to go ahead on, since the people themselves voted to borrow the money at last fall's election. There are still several million dollars of building of this character in the offing, and material interests are turning toward them consistently and persistently.

Labor is no lower since the arbitration award some months back, and the present level, based upon \$1.04 for bricklayers, will probably continue thru February, as the award requires. Altogether the situation locally and nearby seems to be more stable in the last week or so, than it has been for some time past.

The report of the Columbus (Ohio) Building department for the first 25 days in September shows that permits for 80 dwellings were issued as compared with 84 permits issued during the whole of the previous month. In September, 1920, but 20 permits for the erection of dwellings were issued by the department. Exactly four times that number were issued during the first 25 days of September, 1921.

LABOR DOMINANT FACTOR IN CHICAGO

Labor continues to hold the center of interest in the building situation in Chicago. Tho the arbiter in the wage controversy, Judge Landis, has settled the question of wages, all is not yet well with the building trades. Carpenters have not yet gone back to work and refuse to consider anything but \$1.25 per hour. In some cases men have been secured at the new wage of \$1.

Efforts are being made to cleanse the building trades from rotten business agents and many have been indicted and will be called upon to answer serious charges of extortion and bribery.

Construction is proceeding at a fair pace at present, building permits being mostly for small houses. During the last two weeks a number of large sized permits have been issued. Several apartment buildings are to be built, costing between \$150,000 and \$200,000. One of the largest projects announced was

(Continued on page 534)



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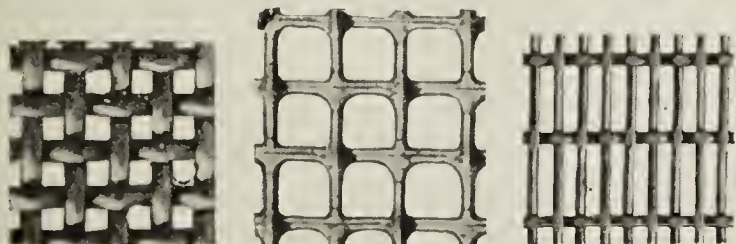
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(Continued from page 532)

an eleven-story brick apartment hotel, to cost \$1,000,000. Several other projects of the million dollar class have been passed by the building commissioner's office.

Contractors express the hope that the muddle will be cleared shortly and are looking for an abundance of work when that happens. As soon as labor has been stabilized and freight rates have been reduced there will be no more reason for the investor to withhold his money and, according to opinion in some circles, it lies in the hands of these two factors to launch the country on a building boom.

SEPTEMBER TOTALS HIGH IN MINNEAPOLIS

When building statistics for the month of September are completed in Minneapolis it is likely that the total amount spent for construction work in that month will be close to a record. Permits for the week ending September 10 totalled \$1,321,800 and in the following week jumped to \$3,109,000. Indications in the Twin Cities, as well as in most parts of the country are that fall building will be as heavy or probably heavier than a normal year.

THE LOUISVILLE BUILDING MARKET

Demand for brick and clay products in Louisville, Ky., is fair, altho not heavy. Sewer pipe has been active, and hollow tile has been good, but the brick and clay trade as a whole is not operating at capacity. Dullness has been especially pronounced in the fire clay plants.

Altho building operations in Louisville have been heavy this summer, and for the past few weeks have been showing big gains over last year, and over a period of several years, most of the building calls for cheap frame construction, with foundations largely of cement, with the result that demand for building brick has not been as heavy as it should be. The number of high priced residences constructed has not been large, and there has not been any great amount of commercial or industrial activity in the building line.

One concern after losing a couple of orders is of the opinion that prices are too high, and is contemplating a reduction in values, but the majority of brick men are opposed to reduced values, with winter coming on and prospects for higher prices for coal.

Present brick quotations show face brick on board cars at plant \$24—delivered \$28. Salmon brick, \$12, and \$15 delivered; common hard, \$15 and \$18. One producer is planning to put in new prices with the delivered figure at \$20 for face brick; \$13 for common hard and \$10 for salmon. These prices are all subject to a five per cent. discount, for cash within ten days. Hollow tile is quoted at 50 per cent. off list on board cars, and 45 off list delivered.

BUILDING IN BIRMINGHAM

The general tendency of the market for building brick and other building material in Birmingham, Ala., is steady, but few changes in prices being noted. In fact, all kinds of building material is holding its own in price, with an increased demand over two weeks ago. A number of new buildings, which have been commenced or contemplated, in Birmingham and in that section of the south which is supplied by Birmingham, have increased the demand and kept the prices steady.

Work has not yet commenced on the big auditorium for Birmingham, owing to the city commissioners not having agreed on the plans and estimates as yet, but it is expected that work will begin on this building within the next few weeks. The building will be built of brick and stone, and will have a seating capacity of 8,000.

Smith Contracting Co., of Birmingham, is building a sanitarium for the state of Mississippi at Columbus, at a cost of \$544,030, which will require many thousand brick.

Work is progressing nicely on the new Collins Hotel. This is to be a three-story brick structure, and will cost about \$75,000. A number of small brick stores and residences are being erected in Birmingham, in the down town sections, and on the outskirts of the city. The city is spending over \$3,000,000 in the erection of new public school buildings. In all there is perhaps \$5,000,000 being spent in new buildings of all kinds in Birmingham and in the Birmingham district.

SOUTH CONTINUES ACTIVE

Despite the advent of winter, construction in the South maintains its pace. The various cities of importance continue to report a goodly number of permits and work is still inclining towards habitation building. Totals of permits issued for industrial buildings remain low but some large office buildings are being constructed.

In Beaumont, Texas, the contract for a 12-story office building to cost \$500,000 has been awarded; at Roanoke, Va., contract for the erection of a \$225,000 office building has been let. At Abilene, Texas, a building program to involve the expenditure of \$3,000,000 is now under way. New Orleans, La., during August issued 321 permits, totalling \$960,050, the bulk of which were for residences; Memphis, Tenn., 297 permits, totaling \$1,010,926, including 32 brick veneer dwellings amounting to \$220,200; St. Louis, Mo., 1,151 permits, amounting to \$1,307,206, this total is slightly in excess of that of August, 1920.

LOS ANGELES CONTINUES FAST PACE

With the fall opening, building has taken an upward trend in Los Angeles and indeed in all Southern California. The great need is for small homes to house the constantly growing population and to lower the rent costs. The other lines in which business is extending is in the erection of mammoth blocks, apartment houses, hotels, theatres, and so forth, and in all of these there is a growing call for clay products, brick, hollow tile, cement and so forth.

There is the million-dollar Grauman theatre, all of fire-proof construction; there are three other equally expensive theatre buildings, all to be finished before the first of January, 1922. There are hotels galore, also of fireproof construction, so it is little wonder the brick, hollow tile and concrete concerns are running long hours.

For the eight months ending August 31, the building permits in Los Angeles alone, for homes, apartment houses and flats, were as follows:

Eight thousand two hundred and twenty houses, for one family use; 203 flats; fifty-one apartments, 21,100 permits in all, aggregating \$48,821,701. During the same period there were 479 permits for mercantile buildings, valued at \$3,858,755; industrial buildings, 64, valued at \$2,303,881; factories, 19, value, \$2,283,676; office buildings, 39, value, \$865,170; warehouses, 48, value, \$785,020; workshops, 77, value, \$141,772; public buildings, 20, value, \$789,850; hotels, 6, value, \$115,000; theatres, 8, value, \$2,550,000; wharves, 6, value, \$214,300. Outside of the industrial districts permits were issued for 29 schools, value, \$1,650,300; churches, 18, value, \$117,400; motion picture studios, 18, value, \$333,376; hospitals, 5, value, \$151,000. Scattered thruout the city there were permits for additions amounting to 2,101 in number and valued at \$3,237,339; 2,050 alterations, value, \$2,493,333; 4,875 garages, value, \$1,883,506; gas filling stations, 137, value, \$110,116.

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Tennessee to Have New Plant

The Southern Brick Co., Bristol, Tenn., recently organized with a capital of \$90,000, will operate a local plant for the manufacture of common brick and other burned clay products. The company is headed by Charles T. Kilgore, Bristol.

BRICK and CLAY RECORD

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decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

MILLIONS TO BE SPENT FOR IMPROVEMENTS

FOLLOWING the announcement that the United States Steel Corporation has provided \$10,000,000 for expenditures during the present period of depression for expansion of its facilities, comes the news that the Standard Oil Co. of New Jersey will spend \$2,000,000 for its New Jersey refineries, providing work for 1,000 men now idle.

The Chicago Tribune calls attention to the fact that the Commonwealth Edison Co. is spending between \$11,000,000 and \$12,000,000 on new generating plants and sub-stations. The Illinois Bell Telephone Co. has prepared a 1922 program calling for an expenditure of \$18,000,000. The By-Products Coke Co. is spending \$18,000,000 on a gas production plant on the Drainage Canal.

These concerns are all well known, successful, and highly efficient establishments. Their actions represent the conservative judgment and action of some of the most successful business men in the world. These men expect better days to come.

The Tribune states that these concerns are preparing to take full advantage of such better days by expanding and improving their facilities for handling business, while such expansion and improvement may be accomplished at a cost of labor and material considerably less than a year or two ago today.

We are not in full accord with this opinion. We believe that this action is due to the realization by these concerns that lower production costs must be found, and that these expenditures are being made, in the main, to lower costs so that fair profits can be made at the prices that will prevail in 1922, and so that trade will be stimulated because of better prices.

By following the action they have taken, these concerns will not only be prepared for the day of improved business, but will hasten that day by maintaining the purchasing power of thousands of workers. Each will react to the advantage of the other.

To spend money on improvements for the purpose of lowering production costs, such as the above concerns are doing coincides exactly with the idea expressed in messages published by *Brick and Clay Record* recently. If corporations with a reputation of success, such as those mentioned, find it advisable to carry on this program it is a good sign that the same prescription is good for others. A good way to be successful is to adopt the methods of those who are successful.

* * *

INDIVIDUAL CONTRACTS WITH EMPLOYEES WILL ELIMINATE MUCH TROUBLE

OF THE FOUR FUNDAMENTALS upon which the clay products industry has been built; namely, (1) Wide distribution of raw materials; (2) Low proportion of labor costs to total production costs; (3) Cheap fuel; (4) Low freight rates; the first one alone remains today substantially the same as its pre-war status.

The last two divisions are outside of the control or influence of the industry. The second division, however, is the one over which the industry can exert more or less influence. A previous editorial has already pointed out how one phase of this factor should be considered. In that editorial the need for increased man-capacity was made emphatic.

The other phase of this fundamental; namely, the price of labor, has not been dwelt upon to any great extent. There has been a noticeable tendency for labor in the clay products industry to become more *thoroly* and strongly organized. Altho this tendency is at a standstill right now, due to the present period of unemployment, we feel that as soon as conditions return to more nearly normal, clay plant labor will take on renewed activity in an endeavor to organize into one big strong union.

Observation seems to prove that wherever labor becomes so strongly organized that it controls an industry, wages become abnormally high. If

such a situation as this should ever pervade the industry it would change conditions entirely and make it difficult for the industry to compete with industries manufacturing substitute products.

This may or may not happen in the clay products industry, but it seems that it would be good insurance to guard against it.

We believe that labor organizations in the form of high class unions should not be prohibited. However, there have been instances where labor organizations controlled industry entirely, and abused its power, much to the disadvantage of the industry and public as well. Such a situation cannot be espoused. One of the best and most satisfactory plans for dealing with labor, it seems, is to make an individual contract with every single employee. This contract might permit the worker to leave the services of his employer at any time he chooses. But with individual contracts in force, unlawful picketing with the object of inducing employees to violate the contract of their employment with an establishment in the event of a strike, must immediately be enjoined by any judge in any court thru his own conscious act because of the patent infringement of the manufacturer's rights to individually contract with his own employees.

The strongest possible argument that can be advanced in favor of the *contractural* relations with plant employees is that in the event of controversy with employees thru outside influence, such as desire to bring about a closed shop in a plant, an injunction must immediately ensue where individual contracts with employees are in force, and consequently this would be the manufacturer's greatest protection.

No great mass of evidence is necessary for presentation to any court in order to secure an injunction when a strike takes place if individual contracts with employees exist.

Some clay products manufacturers have given this subject considerable thought, and have formed a national organization composed of clay prod-

1922 Will Reward Those Who

ucts manufacturers only, the purpose of which is to effect amiable and satisfactory relations with clay plant labor. The matter of contracts has been considered by this association. They have found some of the types in use fair and others not. They are in a position to give valuable information on this subject, as well as any others dealing with labor that might in any way interest the clay plant operator.

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HELP THE FARMER TILE HIS LAND

LAYING OF DRAIN TILE has always been a problem for the farmer. Not being possessed of scientific knowledge of the correct way to lay tile with regard to soil conditions and other things which vary in different sections of the country, it is hard for him to decide what size of tile to use, how far to space laterals, or whether it would be profitable for him to do any tiling at all. Practically the only way the farmer has to determine what method to use in tiling his land, is by the success others in his neighborhood had.

Suppose the farmer decides to tile his land and adopts what he thinks is the best method. Results will undoubtedly be profitable. However, he does not know whether the putting in of more tile than he used would not have produced greater results.

This situation should be remedied and it really is to the interest of the drain tile manufacturer to take the initiative in the matter. We have heard of a plan which appears to us very good and entirely practicable for use in our country. The Ontario Agricultural College at Guelph is furnishing to any farmer who desires it, the services of an expert in drainage. The only expense which the farmer incurs, is the transportation of the expert and his accommodation while on the premises.

We have no doubt that if an organized effort were made by drain tile manufacturers, in the Middle West especially, an arrangement similar to that of the Ontario Agricultural College could be made with either the state government or state universities.

In very few parts of the country has tile drainage been more than one-

fourth completed and the lack of accurate knowledge has kept many a farmer from installing an efficient system of underground tile drainage on his land. If an arrangement to provide the farmer with expert advice and drainage engineering as outlined above, could be made, the drain tile manufacturer will have helped, not only to stimulate the sale of his product, but also to render a great service to the agricultural industry of this country.

CONVENTION TIME

is drawing near. This year, more than any previous year, will it be to every clay manufacturer's interest to attend the annual convention of his trade association. The industrial situation, traffic problems, advertising, prospects for next year, trend of the market, wages and other items are problems that face every producer. Discussions and counsel on these matters from brother manufacturers are more than ever of vital importance. It will cost you money to remain at home this year. Announcements and complete details will be posted as they develop, in future issues of "Brick and Clay Record." Watch for them!

POSTING THE SIGNS ON THE ROAD TO PERMANENT CONSTRUCTION

THE OTHER DAY a man interested in the welfare of the clay products industry was visiting in a suburb of Chicago. Passing by a new residence in process of construction (which to all appearances was obviously to be built entirely of frame), he remarked to the owner, "I suppose you will face this home with brick."

"Brick?" replied the owner, hesitantly, and as tho he had never heard of that material before. "Why no—I am not. I really have not considered brick."

Had this man noticed the advertising in the various magazines, he probably would not have passed up clay products entirely.

Had the contractor who was build-

ing this house been convinced of the greater merits of clay products construction, and had he been assured of good profits, simple construction and better service for his client, he would at least have mentioned this type of building.

Moreover, if the local dealer were consulted—and the local dealer happened to be one of those who executed his part of a 100 per cent. cooperation agreement with the manufacturer—then the builder would have been given the suggestion from his local dealer.

Furthermore, had the local bricklayer union been educated to the idea that advertising clay products construction would be of direct benefit to its members, perhaps one of the bricklayers may have heard of the contemplated construction, and in order to obtain more work would have put in a word for brick or tile. Thus the builder would have had to pass one more guide post before getting on the wrong road.

All this goes to prove that the clay products industry has still much to do to complete its system of guide posts, which will mark the usual lanes that the builder travels, guiding him towards sensible construction.

In this editorial we wish to comment chiefly on one of these guide posts. We mean the direction that can be given by the local bricklayer. There can be little doubt but that the plan outlined in the article appearing on another page of this issue, which tells of the cooperative work planned by the "Permanent Builder" in harmony with the A. F. B. A., C. B. M. A., and H. B. T. A. in the endeavor to get the bricklayer to advertise clay products, will be one more good effort to get the public to consider permanent construction. This is noble work, but it will not reach its possibilities unless it has the active help of the individual clay product manufacturer.

Every manufacturer should align himself with the idea. He is on the ground and can be of valuable help in putting the idea across because of his personal contact with the various principals and his knowledge of local conditions. The manufacturer's work is there for him to realize it.

Have Reduced Their Costs!

IT'S 1 to 9 THAT YOU WILL FAIL

Mortality Rate in Clay Industry is Enormous—Production However, is Increasing—Cause Must Be Due to Inefficiency and Waste

WHETHER OR NOT every reader concurred fully with all the points brought out in the editorial that appeared in the October 4 issue of *Brick and Clay Record*, the same conclusion will be reached. For instance, some persons maintain that prices will never even approach their former levels. This point, however, need not disturb the argument, for it is obvious that whatever be the balance of relationship toward the general status of price, the lowering of production costs opens three possibilities for a concern.

Lower costs may enable one to compete better with manufacturers of similar materials. Secondly, it may widen the field by reason of enabling the manufacturer to compete with substitute products. Thirdly, it may bring down prices to a point where the consumer will no longer hold off purchasing. As stated before, this is true regardless of other conditions.

ONLY BEST PLANTS WILL SURVIVE

Darwin's theory of the "survival of the fittest" is as true now as the day he expounded it. An investigation of clay products statistics reveals some startling information which points to the significance of Darwin's theory. An accompanying chart shows the percentage of increase or decrease in the number of clay plants making reports to the United States Geological Survey.

Each percentage figure was determined by subtracting the number of plants in operation on December 31 from the number in operation January 1, thus determining the loss for the year, and then dividing by the number in operation on January 1, of the same year. The chart is virtually a history of the successes and failures in the clay working industry in the 20 years from 1899 to 1919.

It will be seen from a study of the chart that the mortality rate for 1918 was 11.7 per cent.—one out of every nine concerns dropped out!

LESS PLANTS, BUT OUTPUT INCREASES

The numerous plants scattered thruout the country that have been abandoned and are going into decay are mute evidence of the truths shown by this chart, and also the truth of the statement made by Mr. Ayres, quoted in another part of this article. It might be imagined that the reduction in the number of plants reporting annually to the Government is evidence of the curtailment of the total output of clay products plants. As a matter of fact, every branch of the industry increased in output during the years 1899 to 1914, except the small class of ornamental brick. Several classes doubled their production, and in the case of hollow building tile the 1914 total was almost eight times as large as the 1899. Thus there is an enormous increase in output despite the fact that the number of plants has been decreased. The reason for this is undoubtedly suggested—the "weak sisters"—those whose production costs remained high so that they could make no profit at prevailing prices, failed; and the neighboring plants took care of the demand formerly supplied by these concerns. Or, the plants were purchased by other concerns and improvements made to lower the production costs.

RAW MATERIALS UNIVERSALLY DISTRIBUTED

The clay products industry is in a peculiar position, to a certain extent, because of the universal deposits of raw material. In many other industries, plants obtain monopolies on the supply of raw material and can make a profit even tho their costs are high and their equipment old and

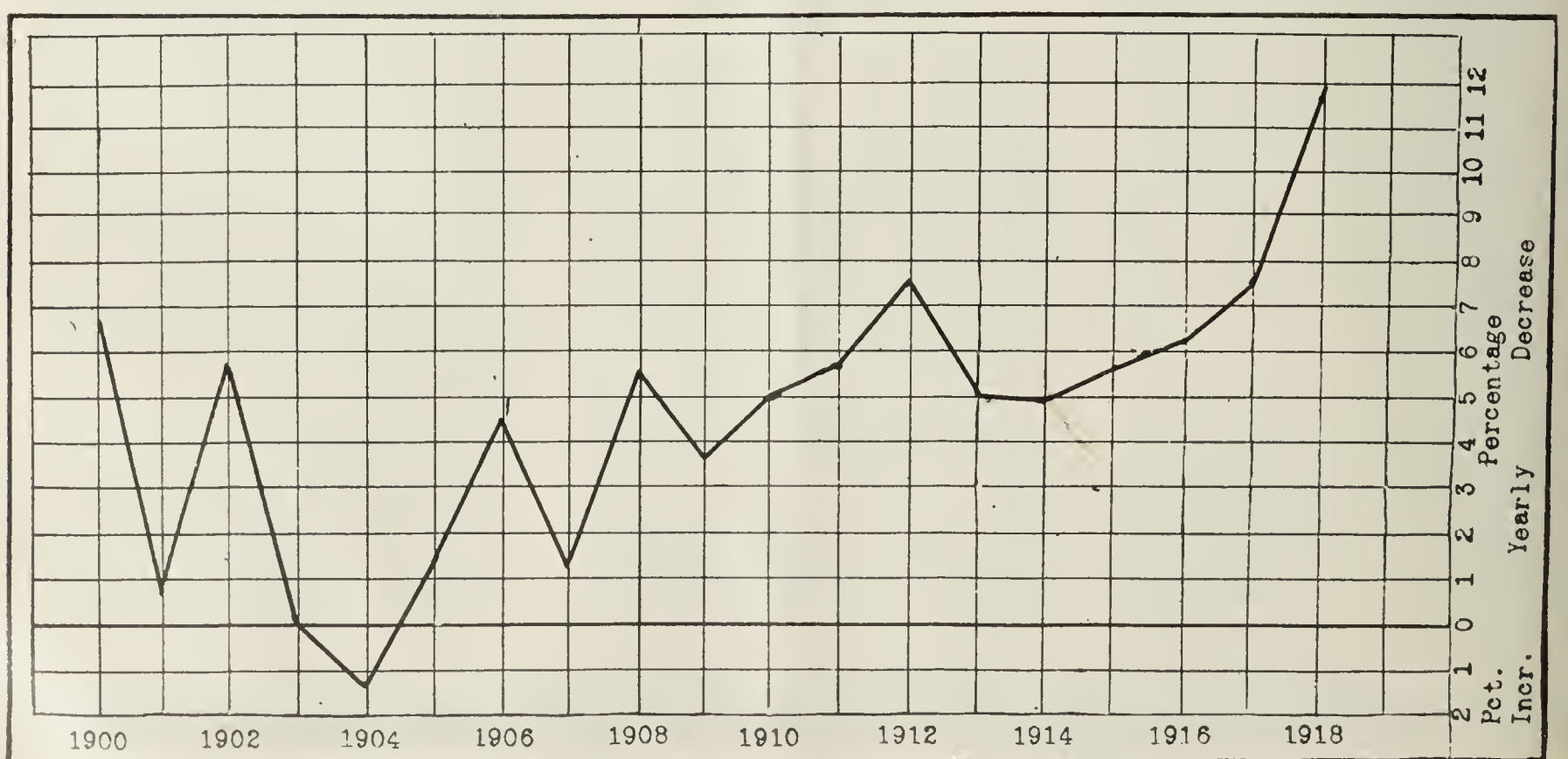


Chart Showing Clay Plant Mortality for the Last Twenty Years for Which Figures Are Available. The Curve is Plotted According to the Percentages of Increase or Decrease Shown at the Right. In Every Case the Number of Plants Reporting at the First and at the End of Each Year Are Used to Arrive at the Percentages.

inefficient. Not so in the clay industry, however, because no plant in this industry can have a monopoly on raw material. For this reason it is obvious that the clay products manufacturer must ever be on his toes and keep his plant operating at low cost, thereby keeping pace with the new plant going into the field which is built according to the best engineering knowledge of the day.

Both the trend of price and its level are component parts of demand, and there are two classes of customers that we must cater to. The first buys on the basis of the price trend. Whenever prices are not falling this class buys if convinced of the merits of the product. In this case the trend or tendency of prices governs the demand.

LOW PRICE MAKES COMPETITORS DANGEROUS

The customers of the other class buy on a basis of price and if clay products are too high they will purchase substitutes. Cement, for instance, is the basis of several materials that compete with clay products. If the price of cement were twice as much as it is, there would be little competition, but if the manufacturer of cement puts his house in order and reduces his costs now so that he will be able to sell to the consumer at a lower price, what will happen to the clay products manufacturer if he does not do likewise? Correspondingly, if the manufacturer of clay products does reduce his costs, and the manufacturers of competing materials do not or cannot, is it not natural that the clay producer will increase the demand for his product?

One of the large elements in production costs is labor wages. From Leonard P. Ayres of the Cleveland Trust Co. we quote:

"A careful study of the course of wages during the past 100 years has been made by Dr. Ralph G. Hurlin who compiled the data on wholesale prices. The results of this study are presented in the accompanying diagram, on which there are two lines representing the course of the weekly wages of artisans and of laborers during the past century.

CENTURY AGO AVERAGE WAGE \$7

"The upper line shows the average weekly wages each year of five sorts of artisans: carpenters, house painters, machinists, blacksmiths and compositors. The lower line shows the weekly wages of adult, white, male, unskilled laborers in industrial establishments.

"One hundred years ago, in 1820, the average weekly wage of the artisans was about \$7. This rose steadily during the next 40 years until it was about \$10 a week in 1860, just before the outbreak of the Civil War. During the course of that struggle these wages rose from the \$10 level to \$15 and then kept on rising until 1869, or four years after the close of the war, when they passed \$17. Then came 10 years of decline until 1879 when they were \$14.74. A slight recovery lifted them just above \$15 where they stayed for 20 years, or until 1900. They then rose for 15 years, or until 1915, when they amounted to \$21.38, and shot up for five years during the World War, and for two years after its close, to an average of \$42 in 1920.

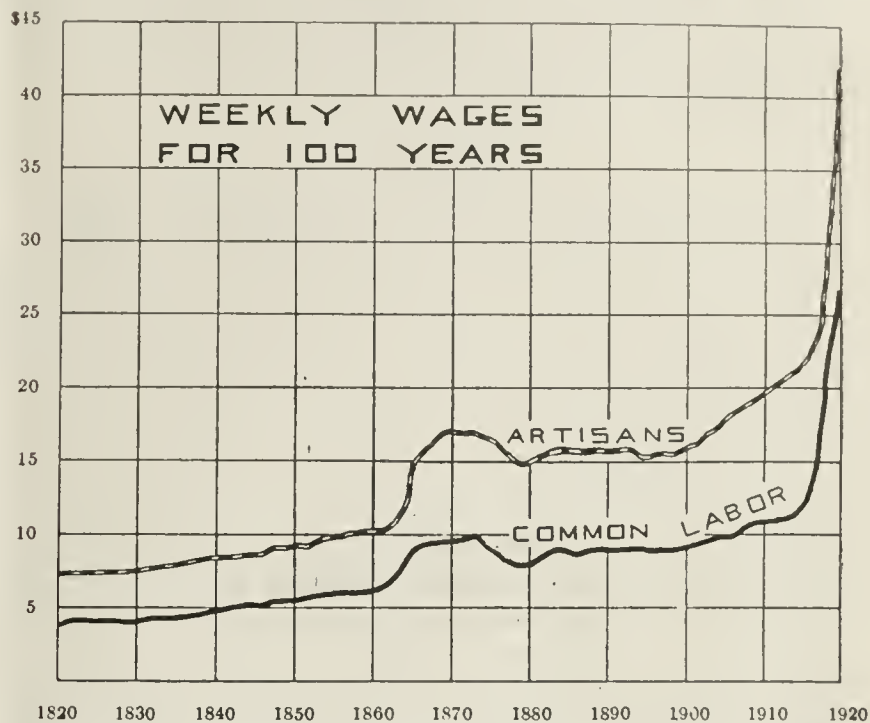
ARTISAN AND COMMON LABOR MAINTAIN PARALLEL

"During this entire period of 100 years the course of the wages of common labor ran along nearly parallel to that of the artisans and thruout the century their relationship to each other is such that the artisan wage is almost always about 180 per cent. of the common labor wage.

"As compared with the changes in wholesale prices, the variations in wages came tardily and moderately, conforming in these respects to the general economic laws that were set forth earlier in this paper. This, however, is not a sufficient explanation of the marked differences between the great changes in prices in the half century following the Civil War, and the comparatively moderate changes in

wages. From 1870 to 1896 prices fell 55 per cent. while artisans' wages declined only nine per cent. From that date to 1915 wholesale prices rose 51 per cent. and wages only 38 per cent.

"It is worth while to consider how such great differences were possible, since in large measure the workers that produce the commodities constitute the consuming public that



In the Above Chart Note How Artisan and Common Labor Run Parallel. The Artisan Has Always Received About 180 Per Cent. of the Common Laborer's Wage.

purchases them. This means that there must always be a general balance between wages and prices and yet the figures make it look as tho such a balance had not existed.

"Most of the explanation is to be found in the revolutionary changes that took place in industry during that half century and greatly increased its productive capacity. The Civil War ushered in the modern era of great industries. Before that time there were few large factories in the modern sense of the term and much of manufacturing work was still done in the homes of the people.

"In New England one may still see the additions to the old farm houses that were built during the Civil War for the purpose of sheltering the members of the family and the neighbors while they made shoes and uniforms for the soldiers. The material was cut up in the shop in the villa but the making was done in the homes. Large factories, as we know them, hardly existed.

CIVIL WAR BROUGHT INDUSTRIAL CHANGES

"The Civil War brought the beginnings of quantity production. It was followed by important inventions and the introduction of large units of power. Then came factories, automatic and semi-automatic machinery, electricity, and high speed steel. These advances in production enabled each worker to produce each day more than he had formerly, and since his productivity was greater, his wages did not need to decline in proportion to the prices of commodities. His share in the output increased; and his standard of living rose.

"The question as to whether or not we are to see wages shrink far less than prices in the next few years is largely a question of what happens to the efficiency and productivity of industry. If improvements in processes and in management can largely increase the output per worker per day, then wages will not have to decline so far as prices. If, on the other hand, the output does not come up, then wages cannot permanently retain the gains they have made."

Conditions will not always be like they are now, with a

dozen men available for every job vacant. When the time comes when unemployment is again nil, the wages the clay manufacturer will have to pay will be dependent upon the wages paid by other establishments in his community.

The plants that are going to show the best profits, the ones that are going to be prosperous and be looked up to as leaders at that time are the ones that are going to heed the message of history and of the leading men of today. They are going to curtail waste at every possible point, and reduce their costs to the very minimum by installing every possible improvement and labor saving device.

* * *

Gotham Brick Prices on Upward Grade

Week by week the general construction market reveals the returning strength, first by more active inquiry, then by price stiffening here and there, and finally by actual price advance, says the Dow Service daily building report of October 1, 1921.

Confirming the opinion expressed in the building material trade in the first part of August that the awakening construction industry would mark the low price level for 1921, the foremost among the basic building materials, common brick, turned firmly toward a higher level last week, when the market was definitely recorded at \$15-\$16 wholesale instead of \$15. While this lead was taken by Hudson brick, Raritan brick manufacturers, also feeling the pressure from this market, quoted the same level.

The trade finds some significance in this turn in brick prices on the ground that practically none of the great quantity of brick coming into New York in August-September went into dealer reserves. Had it been so, the demand would have the effect, at least, of being artificial or speculative.

But since practically every brick coming into New York is going right into actual building construction operations, mostly in Brooklyn, Queens and Bronx boroughs, and dealer reserves have yet to be laid in for the winter, the price turn upward is justified by manufacturers upon the law of supply and demand. The fast approaching close of the brick manufacturing season and the unexpected change in the autumn-winter building outlook, with no official count yet made of the 1921-1922 brick reserve up the Hudson, have had a stiffening effect upon brick in particular and all clay products for building purposes in general.

The prospective investor who further defers his construction plans in the hope of finding building costs lower is wooing futile fancies. The low point in building material prices in the aggregate has been reached. The turn dates from the middle of August. There is no reason, taking the market as a whole, for building material prices to drop.

The railroads are not yet buying with free hand, and the pressure of public opinion to give the unemployed occupation this winter by proceeding with municipal improvements is a factor of building material requirement that, of course, cannot now be calculated upon.

The striking feature about the upturn in building construction activity is that it was accompanied by increased building activity.

For nine months building stagnated while material prices went down. As soon as it stopped descending and began to show a definite course upward, building construction activity increased until the demand for building materials in boroughs outside of Manhattan actually exceeded the volume required for this time of the year in the normal year of 1914. The building investing public, apparently, was waiting for material price and construction cost stability more than for a return of 1914 normal condition.

The only spectre upon an otherwise brilliant horizon in the building trades is the danger of building material prices

and construction costs once more getting out of conservative bounds. Another building blight is surely due if material prices even approximate 1920 levels.

* * *

Common Brick Industry Looks Much Brighter

Common brick is steadily reflecting the upward turn of construction, says the Monthly Digest of the Common Brick Manufacturers' Association for September. The steady increase in business indicates strongly that the actual turn in the tide of construction has taken place.

One hundred and twenty-six manufacturers representing every section of the United States show 254,000,000 brick on hand, an increase of 22,000,000 over the report of 110 manufacturers last month. This practically means that shipments have kept up with production. The same ratio of increase is shown in orders on the books. The 126 manufacturers show orders for more than 158,000,000 brick, while 110 manufacturers in the previous month's report showed orders for 130,600,000.

By striking an average of all the prices reported, \$13.87 is obtained as the composite figure. This compares with \$14.04 for August, indicating that brick prices are not yet stabilized.

Labor and fuel conditions in the industry continue to be satisfactory. About 35 plants among the firms reporting are still shut down on account of no demand for brick but this is in a great measure offset by the fact that out of the 126 manufacturers 69, or more than one-half, report either good or fair outlook for the forthcoming month. This is a decided change from the pessimistic reports of the past.

Secretary Hoover's National Building Code Committee is now considering the construction known as the Ideal wall. From the Republic of South China comes word that the Ideal wall has been used in that semi-tropical climate for hundreds of years.

* * *

76 Paving Brick Plants Use 1,133 Kilns

The September issue of "Dependable Highways," the monthly bulletin of the National Paving Brick Manufacturers' Association, contains some very interesting information regarding the industry. The bulletin says:

"Generally speaking, when you want shoes you recall New England, when it is steel you think of Pittsburgh, Gary or Birmingham, but when it is vitrified paving brick you have a nation-wide choice of supply with plants conveniently located in 26 states, thus affording national distribution to the buyer.

"It may be interesting to cite a few figures giving some idea of the physical size of the industry. In a recent survey of 76 plants, representing a normal annual capacity of 4,570,000 tons, we find 677 bee hive kilns, 450 rectangular kilns and six continuous kilns, the longest of which is more than 1,500 feet. Brick are burned with coal in 62 plants, gas in 13 and oil in one. The survey shows that 56 producers with an aggregate capacity of 3,630,000 tons expect to be in full operation this winter, greatly exceeding production for the last several winters."

* * *

Prohibit Exporting of Brick

To expedite the recovery from the devastations of war the Belgian government has forbidden the shipment of brick out of the country. The need for this material in the country is so great that no brick are allowed to be exported. Belgium is fast getting back to pre-war conditions and is said to be nearer normal production than any other of the European countries.

WHAT OTHERS SAY

*Comment on October 4 Issue "Brick and Clay Record" Editorial,
Theme of Which Was Necessity of Lower Production Costs!*

EVIDENCE that the clay products industry for the most part is progressive, alive to the situation, and aware of the necessity of eliminating wastes, is shown by the many letters received at the offices of *Brick and Clay Record*, commenting on the editorial which appeared in the October 4 issue. It would take too long to review this editorial here, so we advise those who have not already done so to read the October 4 issue carefully. We are certain that it will be absorbing.

One writer has expressed himself as recommending the publication of such articles as the editorial referred to at frequent intervals. He believes that the publication of such articles will undoubtedly cause owners of plants to study where they can improve their operation with the consequent raising of the standard of clayworking establishments.

FOUR DIVISIONS WHERE COSTS CAN BE LOWERED

The editorial was written for the express purpose of stimulating thought. The following divisions or departments in almost every clay plant can find room for improvement:

1. Raw Materials—(a) Clays, (b) Coal.
2. Production Costs—(a) Wages, (b) Coal (handling and burning), (c) Equipment.
3. Distribution—(a) Freight Rates, (b) Selling, (c) Advertising.
4. Administration—(a) Purchasing, (b) Management, (c) Cost Accounting.

While it would be impossible to publish all letters received commenting on this editorial, we feel that it is advisable to publish at least some of them. Those which are reproduced in full or in part on the following pages are so splendidly written and indicate the progressiveness of the plants represented, that we feel their publication will serve as an ideal or inspiration for other manufacturers.

Some of the leading and best known men in the clay products industry contributed to the following symposium, and no more interesting or absorbing reading matter has ever been presented to the subscribers of this publication.

"Those Who Get Early Start Will Reap Reward"

*Splendid Item from W. J. Gilbert, President, Chicago Fire Brick Co., Manufacturer of
a Variety of Clay Products Made in a Number of Plants Scattered Thru Three States*

THE ECONOMIC HISTORY of the average clay plant has been somewhat as follows:

Clay was discovered in a certain locality, and the interested parties had it tested in a meager way by sending a few small samples to some plant, or a clay machinery manufacturing concern, and on the strength of these tests which they conducted would proceed in many cases, without a practical man to direct them, to purchase their machinery and build their plant.

In the majority of cases, the result was that the clay was not most satisfactory for the manufacture of the particular article they were making. Furthermore, the plant was not laid out so as to facilitate the highest efficiency in the manufacturing process.

INDUSTRY NOT ON SCIENTIFIC BASIS

Finally, after blundering along, the plant was either dismantled, or purchased by practical clay people, who in turn may have made only a partial success of the proposition.

Contrast this history with that of the careful scientific and painstaking investigation made in Germany along the same line, where in some cases, it has taken some two years to make the preliminary survey and plans before starting to build the plant. The result is, that economically the clay industry in this country is not on a scientific basis, but is carried on in a haphazard manner.

OPERATES EIGHT PLANTS

We operate the Chicago Fire Brick Co. with six large distributing yards in Chicago.

The Indiana Sewer Pipe Co. at Mecca, Indiana, manufacturer of sewer pipe, flue lining, wall coping, and drain tile.

The New Florence (Mo.) Fire Brick manufacturer of Electric Furnace, "the world's best fire clay brick."

The Wellsville (Mo.) Fire Brick Co., manufacturer of Hi-Heat, Wellsville and No. 1 Savage fire brick.

We have a branch of the Chicago Fire Brick Co. at Marseilles, Ill., where we produce the well known "Marseilles Star" ground fire clay. We ourselves erected these plants; also own and operate the Lyons Fireproofing Co. at Brazil, Ind., manufacturer of hollow tile, and the Chicago Sewer Pipe Co. at Brazil, Ind., manufacturer of sewer pipe and wall coping. We purchased these last two named plants from other parties who had operated them.

TRYING TO ELIMINATE WASTE

We have for some time past realized our shortcomings and have been analyzing very carefully the "layouts" on our plants, with a view to eliminating unnecessary labor and increasing our efficiency of operation, and cutting down our expenses. As typical instances of what we are accomplishing along this line, we mention the fact that we have installed at the Lyons Fireproofing Co.'s plant a coal unloading apparatus, which will pay for itself in less than two years. We are also installing similar machinery at the Chicago Sewer Pipe plant.

At this point we formerly dug our clay by hand. Notwithstanding the fact that this clay bed was immediately adjacent to our property, and a very satisfactory clay for our use, we abandoned it, and purchased a clay property farther away from the plant at a considerable expense, put in a steam shovel, a tramway, a gasoline locomotive, and a trestle. The result is, that we have even a better clay, practically due to the fact that

we have secured a better mixture with the use of the shovel, and even at this great expense of installation, and apparent additional cost of securing the clay, we are in the long run delivering it at the plant for less money, considering the fact that we are uncovering the coal as we take out the clay.

LOCATED WONDERFUL REFRACTORY FLINT CLAY

We are continually on the lookout for mechanical appliances, which will cut down our costs and improve the quality of our ware. We are proceeding along the same line at our New Florence plant. After careful survey, covering many years, we finally located the very highest grade flint clay deposits in this country. Because of the fact that this clay was so extremely refractory, and that we were interested in using the flint clay without plastic or bonding clay, we had quite a problem on our hands to manufacture a brick which would stand handling and transportation. However, after conducting numerous experiments, we finally installed machinery and worked out the proposition, so that we are today manufacturing the "Electric Furnace" brand out of flint clay exclusively. This brick in appearance and bond is equal to any other fire clay brick and is the most refractory on the market.

HOW PRODUCTION IS PLANNED

We are also scientifically planning our production. We care-

fully figure just how many men are required in the different departments in each of the plants, and we make up a schedule on this basis, and insist upon our superintendents producing the tonnage and adhering to the scheduled number of men.

We also have inspectors and at all times check up on the quality of our products so that we make absolutely uniform material. This means our customers can depend upon standardized product, equal in most cases, and superior in many to any on the market.

Our customers today are more critical than at any time in our experience, and we realize that we must do our utmost to meet the present economic conditions, if we are to hold our old customers and gain new ones.

We have known manufacturers who have produced fine ware up to the point where they loaded it into the cars, but thru improper loading, it was delivered to the customers in unsatisfactory condition. The days of the haphazard manufacturer are gone. We clay manufacturers must fit in with the present economic situation. We must appreciate that the most wonderful development in the business is about to be unfolded, and in order to take advantage of the situation, we in turn must rise to the occasion. Those who get an early start along this line will reap the great reward.

To Save \$25 in One Day's Labor Cost

*L. S. Collins, Secretary and General Manager, Los Angeles (Cal.) Brick Co.;
Director of Common Brick Manufacturers Association, and One of the First Advocates of Ideal Wall Construction Writes an Interesting Comment on Editorial*

YOUR EDITORIAL has proven very interesting and should be given careful consideration by all manufacturers of clay products. Shortly after the Armistice was signed, I was of the opinion that a serious re-adjustment in business methods would take place. Our company had a cost system that had been in existence for a good many years without any changes. We employed Ernst & Ernst to make a careful survey of our plants and method of handling accounts and had them install a more modern method of cost accounting. This was our first move toward re-adjusting our business methods to meet the modern conditions. It has proven most satisfactory.

We have two plants manufacturing common brick by the same method and manufacturing an equal amount of brick each day. The installation of this new cost system has proven very beneficial in that it has created a rivalry between the superintendents of these plants, each attempting to produce brick at a lower cost than the other. It seems to me that a proper cost accounting system is one of the essentials sadly needed by most clay product manufacturers and this applies especially to common brick manufacturers.

LABOR COSTS INCREASED DURING WAR PERIOD

During the period of the war, and for some time thereafter, labor costs had increased by leaps and bounds which necessitated our giving attention to labor saving devices and production increasing equipment. It had been our custom to dry brick at one of our plants, with steam, for a number of years. This necessitated the use of a great deal of fuel oil which increased from forty cents to \$2 per barrel within a period of two years. We found after a careful investigation that by the expenditure of some \$25,000 or \$30,000 our dryers could be changed to waste heat dryers, thereby considerably decreasing the cost of drying and at the same time increasing our capacity about 30 to 35

per cent. This change has resulted in quite a saving in manufacturing cost of our product at that plant.

We now have under consideration the installation at two of our plants, of labor saving and production increasing brick ma-

"The editorial is surely all right but I believe that we have enough fully modernized plants in the country at this time to take care of all the business that we are likely to have within the next few years and that those that are not modernized at this time might as well get out of the game and stay out until business conditions become stabilized to a degree that will warrant much expansion. Using the expression fully modernized as applying to our plants, I mean within the limits of established or proven facilities for reducing costs. There of course remain many great wastes, but the way to overcome them has not been fully developed, and following out undeveloped means is much more apt to prove disastrous than otherwise.

"Please do not consider me as pessimistic. I hope for the righting of business conditions as soon as they can be correctly righted, and see no reason why we will not solve all the difficulties confronting us as a Nation as soon as these difficulties can be solved. Just now, I think that about the only remaining way to get clay products to the consumer at a cheaper price and still make a profit, is to have lower freight rates and cheaper coal."—Excerpt from letter received from C. B. Platt, manufacturer of drain tile, and secretary of the Permanent Building Society, Des Moines, Iowa.

chines, in fact we have made an appropriation within the past month to make purchases of this machinery, the installation of which in one plant will save us in labor alone some \$25 per day and will increase the production about 50 per cent. In an-

other plant this installation will make us a saving of approximately \$45 a day and will give us about the same production.

HAVE DONE MUCH ADVERTISING

To meet the increased production we have put forth a good deal of effort toward increasing the market for clay products. For the past two years we have carried on quite an extensive advertising campaign based on explaining to the public the economy in building more permanent residences. The Ideal wall as conceived by the Common Brick Manufacturers' Association has been very instrumental in proving to the public of Los Angeles that a small residence can be built of a substantial material at practically the same cost as a building that burns.

It has resulted in the stimulation of business from a market not reached before by our industry in this city.

You will note by the above that all of your points brought forth have been given careful consideration by our company and I am of the opinion that the most essential of all is that every brick manufacturer know his costs; that he should use every possible effort to reduce his costs, and that he should by every means possible produce new markets for his product. If all clay manufacturers would take these points into consideration, give them careful study and reorganize his business so as to put them into effect he would be very prosperous for some years to come.

The Days of "Wasteful Waiting" Are Over

Comments by A. F. Greaves-Walker, Production Manager, American Refractories Co., Operator of Three Plants; Author of "Clay Plant Construction and Operation"

THE VERY INTERESTING survey of the industrial situation given in "The Editor's Corner" of the October 4 issue is both timely and to the point. While we cannot agree that 1921 has rewarded fighters, even in a majority of cases, we certainly will agree with you that 1922 will reward those who have reduced costs. That the days of "wasteful waiting" are over is as certain as that night follows day. Whether the manufacturers of ceramic products realize this or not remains to be seen, but those who do not are headed straight for financial difficulties.

The question is—how shall we prepare for the future and how shall we reduce costs?

CERAMIC INDUSTRY NOT NOTED AS MONEY MAKER

The ceramic industry, large as it is, has never been noted as a money maker in the same sense as we think of the steel or oil or copper industries. This is simply another way of saying that the industry is in the hands of poor business men. And isn't it an admission that there is something in the methods of the industry that makes losses where profits should be? Stop moment and ask why the industry, taken as a whole, did not

took its properties for granted or allowed interested parties to make the necessary tests and reports; it employed a so-called "practical" man to handle the construction, the only requisite being that he would accept a *low salary*. Usually this man had no plans or only meager ones and built the plant "out of his head" and unlike the steel or cement plant, this one was foredoomed because the organizers in selecting executives considered salary first and ability afterwards.

COUNTRY COVERED WITH INEFFICIENT PLANTS

The country is literally covered with ceramic plants built and operated under such conditions—plants that are inefficient,

"The position you take in this editorial is obviously correct and I do not feel that I can add anything to this by anything I might say.

"As to what we have done at our plant recently, I believe you are familiar, as you have visited us not very long ago.

"As to our immediate plans in the nature of cutting costs, we can say that at this time we are devoting most of our energies toward our burning problem with the idea of cutting the costs there.

"Of course the big items of cost to the average clay plant operator are coal and labor. Over the former, the average owner has little control and we can only hope for lower prices next season.

"As to the latter, this also is a problem for the individual operator within certain limits."—Excerpt from letter received from E. F. Plumb, president Streater (Ill.) Brick Co., chairman Illinois-Indiana Division A. F. B. A.

Editor's Note—Since Mr. Plumb refers to our visit to his plant, we might add that one of the most thorough studies of plant equipment and operation ever made on a clay plant is being conducted by several engineers employed by Mr. Plumb.

The rearrangement of facilities for loading shale and transporting it to the plant; the introduction of an industrial truck for transferring dryer cars to kilns; the building of a machine for the economical removal of sand from kiln flues are some features that have already been introduced. When the present investigation is completed, it is expected that some of the most revolutionary changes ever made on a brick plant will be put into service at the Streater Brick Co. factory.

"I feel that the matter of freight rates is the one thing that is holding back business today and yet I feel that the freight rates are not very much higher than they should be. I firmly believe that the railroads should be allowed to make eight to ten per cent. on their investment. Of course, what their actual investment is, is hard to say.

"The other subjects that you put on the list are also important, but it would require a lot of time to give you any thoughts that would be worth while, and we are so busy pushing the sales from every angle that I do not feel that I can take the time at this time."—Excerpt from letter received from H. R. Straight, secretary and general manager Adel (Ia.) Clay Products Co., director Hollow Building Tile Association.

take profits that were made in other big industries during the years preceding the war. Isn't this the answer—

If a steel company or a cement company was organized, its properties were thoroughly examined and diamond drilled by the best experts obtainable, its plant was designed by Julian Kennedy or some other well known engineer, and its success was assured from the start because the organizers employed the best executives obtainable, without reference to salary.

HOW IT IS DONE IN CERAMIC INDUSTRY

What did a newly formed ceramic products company do? It

wasteful, run down and badly managed—plants that haven't a chance in the battle for business that will take place in the next few years, a battle that will be the business "battle of the century."

Business will not return with any war-time rush and there

is plenty of time to take stock and determine on the best methods to adopt in order to bring costs to "bed rock." Following are a few suggestions that may help the clayworker who is wondering where to begin.

TEST DIFFERENT KINDS OF COAL

Coal Supply: If coal from several different sources of supply have not been compared, burn off several kilns using different coals or grades of the same coal. Often a higher priced coal will save a couple of days burning time or several tons on each kiln.

Wages: The common labor wage scale will be governed by the conditions in each section. There is no scale to govern the wages of the foremen and the few highly skilled men required around a plant and it will repay handsomely to pay these men well and to then demand and expect of them the maximum of service. These men are "Key men," the whole output depends on them and they can, if disgruntled, almost wreck a plant before the owners or executives are aware of it.

KILN YARD BIG SOURCE OF LOSS

Burning: Enough has been said on this subject to cover it thoroly, but it can still be said that in the average ceramic plant the kiln yard is the most prolific source of loss. More attention to tightening up the kiln walls to avoid leakage; to better firing practice; to speeding up the burning; to setting the maximum amount of ware in each kiln and to utilizing the waste heat will do much to reduce the cost.

Equipment: Your comment on the replacement of old equipment is worthy of much consideration on the part of the average owner. Many plants were originally equipped with the wrong machines and never can be efficient until new equipment is put in. If a clayworker does not already know where he

can make improvements, he should call in an engineer and find out. He can soon figure how much can be saved and it is easy to figure whether it will pay from a financial standpoint. Sometimes it is an elevator, conveyor or some small unit that is destroying the efficiency of a whole plant and the changing of which means the expenditure of only a few thousand dollars at the most.

MANAGEMENT MUST SEE LEAKS

Administration—Management: It is in this department that most ceramic companies can make wonderful improvements—improvements that may mean their very existence. For in the end the cutting of costs is entirely in the hands of the management. If the management does not have the brains to see leaks and losses and devise improvements there is certainly no hope. In the first place the industry (and this applies especially to the heavy clay products branch) has nearly always cut (?) costs by paying small salaries to its executive. The answer has been the writing into the industrial history of this country the greatest number of financial failures, both in actual numbers and in proportion to the money invested. When will the industry learn that good brains must be paid for just as must good houses, buildings or equipments? On all sides plants which cost from \$100,000 to \$500,000 are being handled by men who are paid from \$1,800 to \$3,000 per year. And the result—a loss of from ten to 20 times these amounts each year, chargeable directly to ignorant but "cheap" management.

This, in our opinion, is the one place where large reductions in costs can be made, but it can only be done by employing men with brains, ability and experience at salaries attractive enough to keep them out of the industries that have learned that low costs and good salaries go hand in hand.

From "Clay in Bank" to "Money in Bank"

By Wm. A. Barron, Barron Brick Co., Chicago and Roanoke, Ill., the
Hollow Tile Plant That Operated at 100 Per Cent. Capacity All Year

WE WISH TO DETAIL some of our experiences in line with your recent editorial. We started out believing that the same business methods could be applied to the manufacture of clay products that are used in other branches of industry which are making money.

When our plant was ready for operation, we formed our works organization into proper shape, and allowed sufficient men in each department to handle every operation properly. Finally we determined the minimum tonnage that must be turned out daily. It was then necessary to determine the actual cost of production.

DIVIDE OPERATIONS IN SIX PARTS

In determining our costs we divided our operations as follows:

- | | |
|-------------------------------|---------------------------------|
| 1. Clay Preparation. | 4. Firing, including Unloading. |
| 2. Manufacturing. | 5. Power, Fuel and Light. |
| 3. Drying, including Setting. | 6. Works Expense. |

In addition to items that are chargeable directly to one department, each operation must bear its proportion of the general works expense, liability insurance, and depreciation.

In arriving at our depreciation allowance, we consider the life of the kilns and machinery at ten years, and the life of permanent buildings at 30 years. All replacements and repairs are chargeable to the operation in which they are used, and in the month in which the work is done. At the close of the month the records inform us of the actual costs per ton of ware pro-

duced. The system provides for a comparison of our costs for the current month with last month, and also with two months ago. We also determine an average cost to date of this year and compare it with the cost to date last year, and also with the cost to date two years ago. This comparison of the costs

"There is no question but that the cost of production of commodities will have to be reduced."—Excerpt from letter received from F. W. Butterworth, general manager of the second largest face brick manufacturing concern in the United States; director of the American Face Brick Association.

for three months, and also for corresponding portions of three years, enables us to see at a glance any variation out of the ordinary.

TAKE INVENTORY EVERY MONTH

Inventory is taken and our books closed the last day of each month. Not later than the tenth of the following month the results of our monthly business are ready for analysis. If the results do not come up to our expectations, an examination of our cost sheets tells us whether or not anything abnormal occurred during the month. If nothing out of the ordinary can be found, then there is but one answer—our product was not sold for enough money. By this method we absolutely know

the cost of producing our ware and the margin of profit. At times it takes courage to face the figures, but we avoid hiding them.

We firmly and absolutely believe that a good cost accounting system is the foundation for success in the clay products field, and are certain that if every manufacturer had such a system he would know, first, what costs ought to be reduced; secondly, that reduction in costs is possible; and thirdly, exactly what percentage of profit he is making on every sale.

COST SHEETS OFTEN INSPIRE AWE

Many clay plant operators stand in awe at sight of our cost sheets. They think the system is complex and expensive to op-

erate. There is no reason for this, as a plant producing 50,000 tons of hollow ware annually can keep its costs as outlined above interwoven with its regular accounting work by using only two people in the accounting department. This work is not drudgery, it is necessary.

A man who has spent many years in the clay industry visited us during the early stages of the erection of our plant. While speaking of clay plants generally, he remarked in a casual way, "There is a long period of time between the clay in the bank and the money in the bank." His words made an indelible impression upon our minds, but we believe he should have added "A good cost system will show you where you are drifting in the meantime."



PUBLIC BUILDING MORE BRICK HOUSES SAYS ILL.-IND. A. F. B. A. DIVISION

THE OCTOBER MEETING of the Illinois-Indiana Division of the American Face Brick Association was held in the LaSalle Hotel, Chicago, Tuesday, October 11. Timely subjects and problems were discussed in a manner of interest to each manufacturer present.

The situation with regard to coal was commented on from various angles. Spot coal can be purchased at unusually low prices during the present time, and it is felt that there will be no shortage this winter, since it is reported from some sources—alho denied by others—that the railroads, docks, dealers and public utilities are pretty well stocked. However, there is a feeling that one of the greatest coal strikes that has occurred in the history of this country will take place on April 1, when the coal miners' wage agreement expires. It is fully expected that the strike will last for 60 to 90 days. During this time and in the period previous to the strike, when the newspapers begin to discuss the strike possibility, there will be a coal shortage. During the strike, there will, of course, be no coal mined at all and during the period previous to the strike, demand will be increased in anticipation of a shut-down, and prices may also soar. It was felt that the best thing to do would be to buy coal on a spot market and store a sufficient quantity for a short period, or contract with a reliable concern to furnish requirements at regular prices in the period preceding the strike. Some felt that if a long strike ensued there would practically be no business anyway.

INTERESTED IN LANDIS BUILDING WAGE AWARD

The Landis award and its influence upon the country in general was of interest to all manufacturers present. Thomas Moulding gave a brief talk on the present status of the building situation in Chicago, and was supplemented by remarks from William P. Varney of the Hydraulic Pressed Brick Co. One member expressed himself as believing that the open-shop movement in the construction industry in Chicago was already initiated on some jobs and that the contractors would declare for this policy soon and could be backed by the leading manufacturers and merchants of the city.

E. F. Mattes of the Decatur (Ill.) Brick Manufacturing Co. gave a brief but highly illuminating talk on the newspaper publicity campaign carried on by his organization in Decatur. The advertising copy advised the public of the various booklets issued by the American Face Brick Association, and it was recommended that these booklets be obtained from the offices of the Decatur Brick Manufactur-

ing Co. As a result of the campaign, 187 booklets were sold in the one city of Decatur. It was felt that this was a remarkably good showing, especially as not one copy was distributed free. It brought the prospect in direct contact with the company, and their willingness to purchase these booklets proved them genuine prospects.

DECATUR LEADS IN BRICK CONSTRUCTION

To this campaign and other campaigns that have been carried on by the Decatur Brick Manufacturing Co. is attributed part of the credit for the fact that with the exception of Chicago, Decatur, alho not the largest city, exceeds all other cities in the State of Illinois in brick residence construction this season. Mr. Mattes has kindly consented to prepare an article on this campaign so that members of other divisions of the American Face Brick Association, as well as others interested in clay products manufacturing, may have the opportunity of learning how this campaign was conducted.

Mr. Andres of the Standard Brick Manufacturing Co., Evansville, Ind., reported that some of the contractors who build residences in Evansville are swinging to brick construction, and that whole blocks are being reserved for brick and stucco types of homes. Mr. McKown of the Brooklyn Brick Co. reported that Indianapolis, which heretofore has been a frame city, is now swinging toward brick construction. W. P. Varney stated that the North Shore, the suburban district north of Chicago along Lake Michigan, which was formerly 15 per cent. brick construction, is now going about 50 per cent. brick construction. This increase in brick residence construction was credited to the national campaign conducted by the American Face Brick Association. Every man present felt certain that the campaign should, by all means, be continued.

NATIONAL ADVERTISING BENEFITS GREAT

Chairman Plumb of the Streator (Ill.) Brick Co. called attention to the fact that if the national advertising campaign is producing such good results in the present stagnant market, there ought to be a very large increase in business in the future when construction really starts in full swing, and when, in addition, the continued advertising campaign enlarges the knowledge of the public in the economy and the beauty of brick. It was felt that the benefit of the national advertising, being cumulative, will increase continually.

The book of plans has assisted the manufacturers to counteract the evil of the carpenter-contractor, who has been the main obstacle and bugbear in the progress of the brick manufacturer.

Mr. Baldwin, divisional secretary of the A. F. B. A., reported that in one single day's mail 1,138 requests were received (over 900 accompanied by cash) for literature on face brick, in addition to requests from members, and that on that same day each request was answered and the booklet asked for sent. This is an indication of the interest and response to the advertising campaign which is now being conducted by the A. F. B. A.

GOOD RESULTS EXPECTED FROM TESTS

Mr. Baldwin further called attention to the tests being carried on under the supervision of R. T. Stull of the Bureau of Mines at Columbus, Ohio, for the four clay products associations. Good progress has already been made, and the expectation is that good results will be shown when the experiments have progressed further. Notes were made on the burning of one kiln near Columbus, and altho no suggestions or recommendations were made, the increased efficiency of the men, spurred on by the interest they took in the experiment, fully justified the belief that the future work of this Bureau will show excellent results.

It was recommended that a new plan of program for division meetings be adopted. This plan adds several new features, including a talk on a special subject and discussion following it by two members of the division. Each member will be given an opportunity to prepare a special paper on a subject of interest to the manufacturers.

A representative of the Lloyd-Thomas Co. addressed the manufacturers in the afternoon on the subject of plant appraisals, which at this time is an important one and of tremendous interest to every concern.



Puts Out High Class Advertising

More and more are clay companies coming to realize that advertising is as essential in that industry as in any other. The Brazil (Ind.) Clay Co. has recently published one of the most attractive booklets which has ever come to our attention. The booklet gives a complete history of the



The Front Cover and One of the Pages of the Attractive Booklet Recently Sent Out by the Brazil (Ind.) Clay Co.

brick made in the plant, from the mining operations thru all the different stages to the finished brick. The book is most attractively gotten up, each page carrying an illustration picturing a part of the big plant. The eight or more textures which the company makes are also illustrated.

The impression which is gathered upon reading thru the booklet is that the modern brick plant is not the one-horse institution it is commonly supposed to be, but is a scientifically constructed plant which can successfully hold its own among modern factories in other industries.

No doubt the Brazil Clay Co.'s policy of advertising has had something to do with the phenomenal business this company has transacted during the year. W. A. Laverty, sales manager says, "We are glad to advise you that this has been the banner year for the Brazil Clay Co., in other words the best business we ever experienced."



September Building Activity Breaks Record

Building contracts awarded during September in the 27 Northeastern States, according to the F. W. Dodge Co., amounted to \$246,186,000. This is not only the largest monthly total that has been reached this year, but it is also the largest September figure on record. The September total shows an increase of 11½ per cent. over the August figure; whereas, during the ten-year period previous to 1921, the average September figure was 14½ per cent. less than the average August figure.

Altho the greatest increase in September was evident in the New York district, substantial increases are noted in the entire Middle Western territory, comprising the Pittsburgh and Chicago districts. New England, the Northwestern States and the Middle Atlantic States showed the usual seasonable decline in September.

Residential building leads among the various classes of construction, amounting to \$95,303,000 in September.

Of even greater significance at the present time is the increase in volume of business buildings. The September figure was \$41,259,000, the largest monthly total on this class since June, 1920. Business buildings represented 17 per cent. of the September total. Construction was started on a number of long-deferred projects of this kind in September. Public works and utilities amounted to \$35,414,000 in September, or 14 per cent. of the total; educational buildings amounted to \$26,459,000, or 11 per cent. of the total. September's record of construction activity appears to indicate that a real revival is on the way.



Wages of German Ceramic Workers

To show the advantage that the German manufacturer of ceramic products has over the American producer in connection with labor costs, it is interesting to note the effect that the decline of the German mark has brought about. The skilled German mechanic today in the ceramic and other industries receives from 280 to 300 marks per week, in accordance with late authentic information from that country. This is five times the pre-war wage scale for skilled labor in German marks, normally valued at 24 cents in American currency; since the depletion of the mark to less than one cent in American money, the German mechanic is receiving but 75 per cent. of what he was earning in 1914 in terms of American currency. On the other hand, wages for the same type of skilled mechanic in the United States, have increased 25 per cent. since 1914, according to present schedules.

To sum up briefly, here is the way the situation stands: the skilled German mechanic, prior to the war, received from 50 to 60 marks a week, with value of \$12 to \$15 in United States currency; now he is receiving from 280 to 300 marks weekly, with value of from \$2.75 to \$3 in United States money. The skilled mechanic in America received from \$30 to \$40 a week before the war, and is now earning on a basis of from \$40 to \$50 a week.

WET SHALE NO MORE RETARDS PRODUCTION

Minnesota Plant Junks Dry Pans and Rotary Dryer—Installs Pulverizers—Increases Capacity—Decreases Costs

WET SHALE! Lime pebbles! How many producers of clay products have spent many weary moments striving to solve these big problems.

Clay plant operation is full of trials and tribulations, but usually there is a way to hurdle each impediment. The real point is to have the resourcefulness and patience to find a method of meeting the situation economically or in such manner that there is an opportunity for a fair profit.

Colburn Brick & Tile Co., located near Zumbrota, Minn., which is about 50 miles south of Minneapolis, was confronted with the difficulty of utilizing a wet shale containing some lime pebbles. The result was that a difficult problem presented itself in the preparation of the raw material for the pug-mill, and several stages of experiments had to be passed thru before the best method of handling this peculiar problem was found.

USE ELECTRIC SHOVEL TO DIG SHALE

Colburn Brick & Tile Co. is a plant of large capacity, manufacturing hollow building tile. The shale used in the manufacture of this product is obtained from a deposit located on a high hill adjacent to the factory. About 15 feet of overburden, which is a yellow, gravelly surface clay, is removed by a steam shovel, and then a bank of shale 33 feet high is worked by an electric shovel.

The shale is fairly soft, weathers easily, but is shot down with dynamite. It is of a decided blue color, but contains

pockets of a reddish substance which is undoubtedly an oxide of iron. Moreover, there are also found lumps of lime formed by the accumulation of the shells of sea animals which lived in one of the geological ages preceding the present.

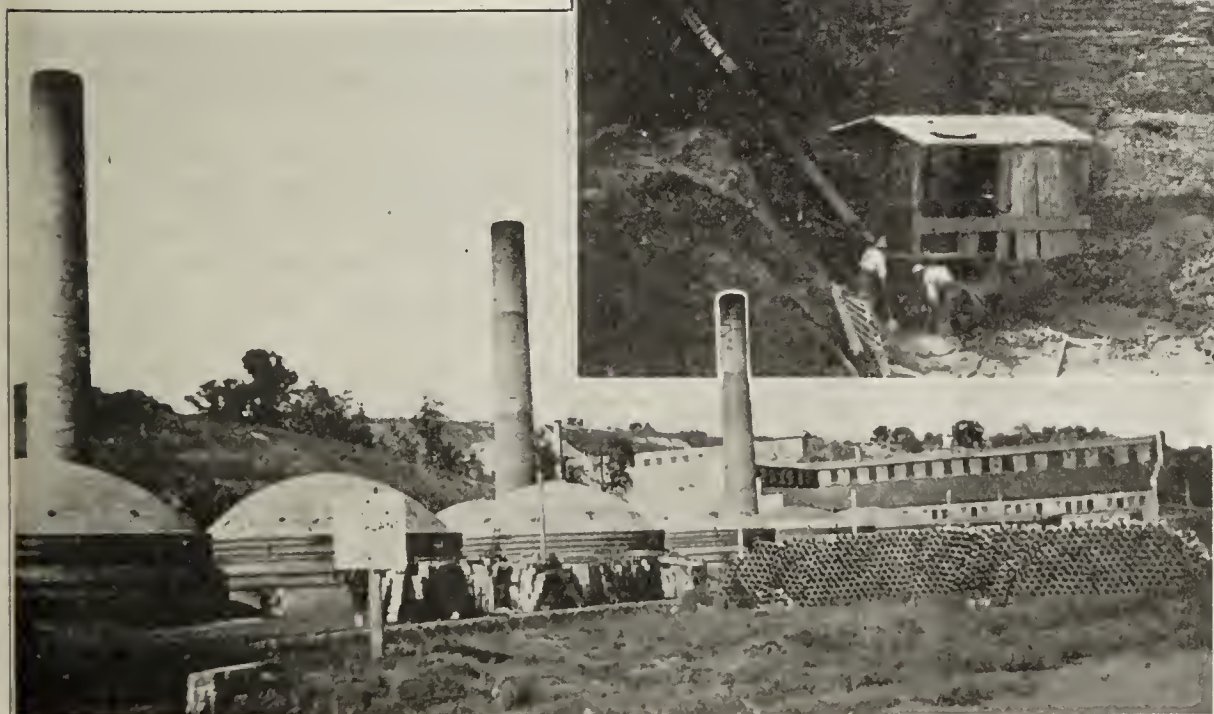
Thruout the whole bank of the shale, there are innumerable springs, causing wet spots wherever they occur. It is this condition that has caused the Colburn Brick & Tile Co. much expense and trouble to remedy.

SHALE CONTAINS 20 PER CENT. WATER

For many years the clay, due to its wetness, would hold down production. The dry pans, of which there were two, simply could not turn out the requisite quantity of material. The clay, which contains about 20 per cent. water, would clog the screen plates in the dry pan, which would necessitate the frequent stopping of the machinery to permit the cleaning of the plates, after which operations were again continued. However, it was only a matter of a few minutes when the same condition would be repeated, and because of this situation it was impossible to produce much ware and make a profit.

Later, a long rotary dryer was installed, but the maintenance of this equipment was excessive, and costs began to mount. The rotary dryer requires continual mechanical power to cause rotation, and it also must be supplied with heat. Moreover, its operation, due to its great length, is not very simple.

Colburn Brick & Tile Co. Shale Bank, Which Offered Difficulties in Manufacturing Due to Presence of Springs and Lime. Clay from Bank Contains About 20 Per Cent. Moisture.



Portion of Plant of Colburn Brick & Tile Co., Near Zumbrota, Minn. Another Unit Is Being Constructed on Other Side of Building.

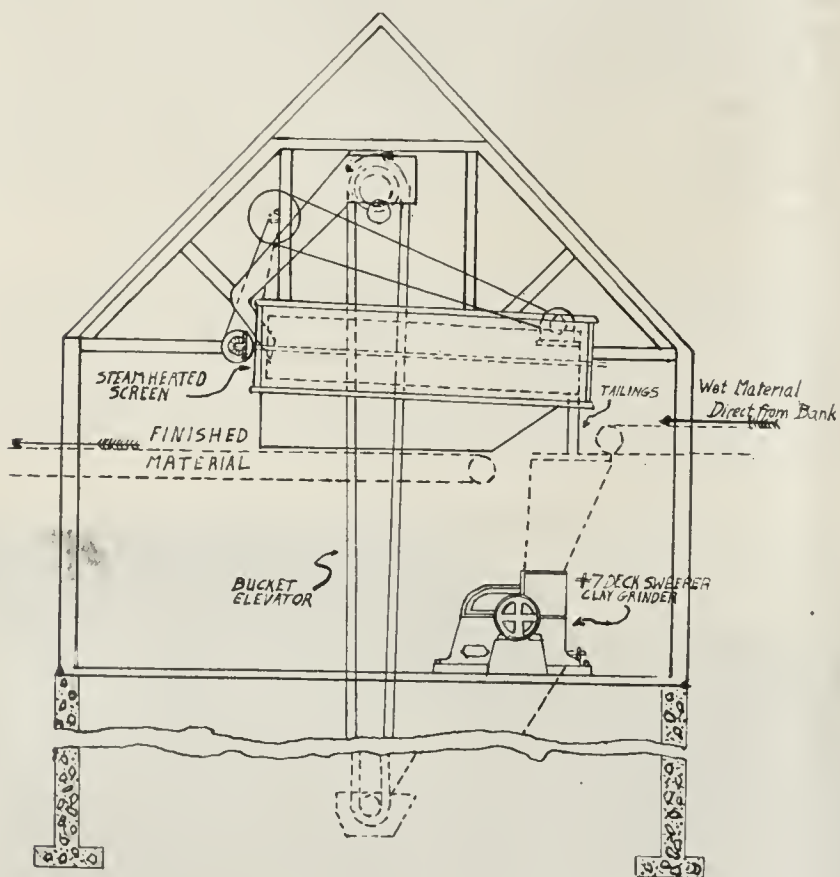
Many different systems of clay preparation were studied, and finally it was decided to let a contract with the Williams Patent Crusher & Pulverizer Co. to install a set of equipment that was designed to meet the problem at hand. The equipment consists of a steam boiler, steam-heated rotary screens, bucket elevators and steam-heated shovels.

FEED CLAY DIRECT TO PULVERIZER

The raw clay is fed directly to the pulverizer from the clay bank without preliminary preparation or drying of any kind. The steam which passes thru the coils in the pulverizer partially dries out the clay and prevents clogging or sticking in the screens.

The clay as it is ground is elevated to screens by a bucket elevator. The screens are unlike those of the ordinary clay plant. They are about 20 feet long, hexagonal in shape and about three feet in diameter. They are made of perforated metal. Coils of steam pipes are placed in close proximity to the screens, and the heat due to radiation dries the clay and aids the passage of the ground clay thru the perforations. The screens experience no difficulty in handling all the clay ground by the pulverizer.

Two sets of such equipment were installed. Thus there are two No. 7 hammer pulverizers, each having a capacity for grinding 200 tons of clay per day, and two 20-foot rotary screens. The crushers are each directly connected with a flexible coupling to a 150-h.p. induction motor.



Layout of Equipment for Grinding and Screening Department of Colburn Brick & Tile Co.

A small horizontal tubular boiler is used to generate the steam required for heating the screens and pulverizer. The steam is maintained at 80 pounds pressure. To maintain this condition, 1,200 pounds of coal are required for firing the boiler daily.

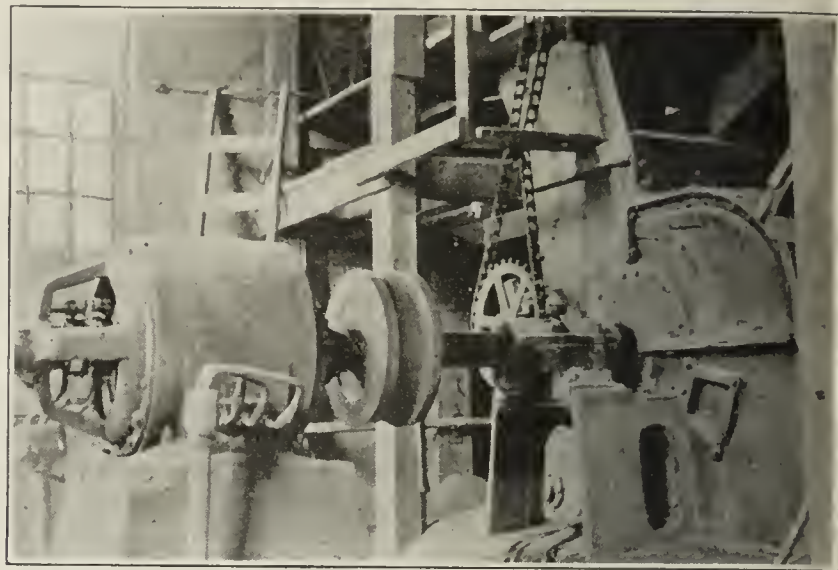
ADDING NEW UNIT

A new unit is being added to the plant, which will enable it to produce 300 tons of hollow ware daily. The two pulverizers, working at a capacity of 150 tons daily each, will be well able to take care of the clay grinding. The clay is ground so that all material is finer than 8-mesh.

Carl Steiner, superintendent of the Colburn Brick & Tile Co., is particularly enthusiastic over the performances and possibilities of the pulverizer. He maintains that he has lowered the cost of grinding fully 25 to 30 per cent. by their in-

stallation. "There is not the wear and tear on the pulverizer that there is on the dry pan," says Mr. Steiner. "The pulverizer will take the place of three dry pans, and if I have anything to say about a clay plant I would prefer the pulverizer to the dry pan in any event without much hesitation."

Mr. Steiner is of the opinion that where a plant is troubled with a considerable quantity of limestone pebbles, the ham-



Interior View of Grinding Department Showing Electric Motor Drive and Pulverizer (On the Right).

mer pulverizer would be a very satisfactory installation to cope with this problem. He believes it would crush the pebbles with ease and grind them to a fineness and scatter the pieces so that in burning they would not check the goods. Nor would there be any chance of the lime slaking due to the absorption of moisture when exposed to the air, when the pebbles are ground in a hammer pulverizer and scattered widely thruout the mass.

The labor requirement for the crushing department of the Colburn Brick & Tile Co. is one man to fire the boiler and oil the machinery, and another to attend to the feeding and operation of the crushers. Entire satisfaction is expressed as to the success and efficiency of the installation, which solved a problem that held down profits for years, and which may prove the salvation of numerous other clay plants in this country and Canada.



New Ceramic Laboratory at Seattle

A new ceramic laboratory, in which investigative work regarding the clays of the Northwest will be conducted, is to be installed at the Northwest Experiment Station of the United States Bureau of Mines on the campus of the University of Washington at Seattle.

The laboratory work in connection with a general study of the clays of Washington has been completed, and a bulletin on the subject of Washington clays is now in course of preparation.

At the Northwest Experiment Station an attempt is being made to remove iron and silicon from kaolin to produce either sillimanite or the oxide of aluminum. Clay was melted in an arcing furnace in presence of carbon; some silicon and iron were volatilized and some reduced to metal. The products contained less iron oxide and silica and more alumina than previously, but not in sufficient amounts to be sillimanite. The refractoriness of these products is to be determined by the ordinary tests.



New Literature on Ideal Wall

New drive to bring home to the prospective builder the value of the Ideal brick wall has been started by the Common Brick Manufacturers' Association, Cleveland, Ohio. Two unusual

amphlets, in colors, have been produced, primarily for use by the members of the association. The smaller deals entirely with the merits of the Ideal wall, emphasizing the material saving, appearance and labor saving qualities embraced in this form of brick wall construction. This little book is being produced in large quantities, and will be available for all members, to send out broadcast in their respective communities. It is expected

to become a significant factor in turning business directly to the brick manufacturer.

The larger booklet deals largely with the Ideal wall construction also, but in addition, contains colored pictures of completed brick houses. It also describes designs in the plan books being put out by the association, and will be sent to everyone who inquires about these books.



BRICKLAYER UNIONS *to* INCREASE EARNING CAPACITY *by* ADVERTISING CLAY PRODUCTS

A YEAR of preliminary work has now ripened into an entirely new scheme for clay products publicity. The American Face Brick Association, the Common Brick Manufacturers' Association, and the Hollow Building Tile Association, cooperating thru the "Permanent Builder" as its agency, have made possible thru their financial aid an advertising campaign that promises well for the clay industry.

The initial effort in the campaign is a letter sent to the secretaries of all local unions of The Bricklayers, Masons and Plasterers International Union of America. This letter points out that nine out of ten men who build a home build it of frame. The reason for this is ascribed to the fact that the lumber men make the people believe that they cannot afford the first cost of a brick or hollow tile house. It is stated in this letter that this is emphatically not the case, and that in the long run the brick or hollow tile house is actually cheaper than frame.

SHOULD ADVERTISE IN LOCAL PAPERS

To overcome this general opinion of the public, it is recommended that the bricklayers advertise in their own local newspaper. Besides overcoming the propaganda that has been directed against the bricklayer as to his low efficiency and high rate of pay, the advertising will tend to increase the number of working days of the bricklayer and mason by increasing the popularity of masonry construction and thus he makes a two-fold gain.

The "Permanent Builder" offers the union printing plates of advertisements that have been designed for this specific purpose, to be used in local newspapers. These printing plates are furnished free, and for every request for free printing plates thru the local newspapers, there will be sent for the use of the bricklayer union's members a free set of all the handbooks and manuals on brick and hollow tile construction.

Local Union No. 37 of Sandusky, Ohio, has already instituted this plan. It is hoped that other local unions will also see their way clear to spend a little money in a similar direction. However, in case it is felt that the expense would be too great, it is recommended that the union get some local contractor, building material dealer, or brick and hollow tile manufacturer to share part of the expense.

FOLLOW-UP SYSTEM EMPLOYED

All requests for the books mentioned in the advertisements coming thru the local newspaper will be sent to the members of the unions by the association receiving these requests. This is done so that the individual unions will know just who is interested in building, and if they desire they can follow up the inquiry with further information and help.

It is estimated that the combined circulation of the newspapers in the towns where there are local unions of bricklayers and masons, is over 30,000,000—almost one-third of

the entire country's population. At least a quarter of a million of these readers are actively planning to build homes, but 90 per cent. of them will build frame homes unless they are told of the many decided advantages of brick or hollow tile homes, and that their first cost is very little more than that of frame. This is the gist of a statement made in a letter to the various local unions.

NEWSPAPERS INFORMED OF CAMPAIGNS

A folder showing samples of newspaper copy to further the use of clay products accompanies the letters to the local unions, and in this folder there are also several editorial suggestions that might be made use of by the local newspaper. These editorial suggestions are in the form of propaganda favoring the use of brick and tile for home construction.

A letter telling what is being done and planned with the bricklayers local union is addressed to the newspapers of every city where these local unions exist. The name of the representative of the local union is also given. The letter includes a copy of the same folder sent to the bricklayer unions and suggests to the newspaper that the matter be followed up and the unions be asked to contribute to such an advertising campaign.

The letter to the newspapers further suggests that should it be impossible to induce the union to run these advertisements, that the local contractor, building material dealer, or brick and hollow tile manufacturer be approached and asked to run them, or it is suggested that a cooperative plan of advertising wherein all partake might be put into force.

ADVERTISEMENTS CAREFULLY PREPARED

The advertisements are carefully prepared and contain reproductions of the covers of each of the booklets prepared by the various associations, and the caption explains where and how to obtain these booklets. Included among them are: "The Story of Brick," "The Home of Brick," and "The Manual of Face Brick Construction," issued by the American Face Brick Association; "Brick—How to Build and Estimate" and "Brick for the Average Man's Home" issued by the Common Brick Manufacturers' Association; and "Hollow Tile for the Home," "Hollow Tile Farm Buildings," and "Hollow Building Tile Manual for Builders and Masons" issued by the Hollow Building Tile Association.

The "Permanent Builder," of which C. L. Rorick is manager, informs us that the full campaign is now being mailed out, and before it is completed there have already been received orders for mats from Ft. Wayne, Ind., Grand Rapids, Mich., La Salle, Ill., El Paso, Tex., and Glenn Falls, N. Y. It is eventually expected that fully 500 newspapers will ask for this service.

The campaign is undoubtedly a meritable proposition, and should have the support of every brick and tile manufacturer in the country.

CLAY SEWER PIPE IMMUNE *from* DISINTEGRATION

*Tells Faults of Various Kinds of Sewer Pipe—How Gas
and Acids Affect Sewers—Soil Action Also Dangerous*

By A. G. Dalzell

Consulting Engineer, Vitriified Clay Pipe Publicity Bureau, Toronto, Ont.

CONSIDER FOR A MOMENT the extremes of temperature, the attack of chemicals, liquid and gaseous, and the impact of water which a six-inch diameter vitrified clay sewer pipe may have to withstand in the service of a modern down-town building. From the basement of such a building there are periodic discharges of high temperature water, and sometimes steam, from boilers and heating apparatus, continual discharges of boiling hot greasy water from cafeteria or restaurant, and alternately with these, periodic discharges of icy cold water falling with great impact from the roof. From other floors of the building come chemical discharges from the laboratories of the drug store, the offices of doctors and dentists, all mixed with the sewage of a day population of five hundred to a thousand people. Day after day, year after year, the vitrified clay pipe will stand all these temperature stresses, resist the corrosive effect of chemicals, the impact of water, and also withstand the action of natural decay incident to being buried in the ground, to which so many materials quickly succumb. After years of service, if removed and cleansed, the pipe may hardly be distinguishable, except from the effects of jointing, from a pipe just out of the kiln.

METAL PIPE MUST BE LINED

Cast and wrought iron or steel pipe have been used and are used for drainage purposes and have their place, but when buried in the ground their endurance depends very largely on the protective coating, which may easily be damaged. The interior of a metal pipe, moreover, even when conveying fresh water, is very subject to incrustation, and water mains have often to be scraped to restore their carrying capacity. Efforts to overcome this have been made by lining the pipe with a protective coating, such as galvanizing, pure lead, or enameling, but these linings are very subject to deformation by temperature stresses, to deterioration by chemical action, or destruction by electrolysis.

All metal pipes are more costly than vitrified clay pipe, except perhaps in some isolated districts where transportation is very difficult, so if substituted for clay pipe it is not on the score of cheapness, but because of some fancied superiority or special conditions.

CONCRETE OFTEN SUBSTITUTED FOR CLAY

The substitute usually offered in place of vitrified clay pipe on the score of cheapness is the concrete pipe. All recognize that this is an age in which wonderful work has been done in concrete. Mighty dams store water for hydro-electric development, enormous locks have made possible the Panama and Welland Canals, and without reinforced concrete it would

be difficult to construct the modern skyscraper. But concrete has its weak points as well as its strong points. It is peculiarly subject to temperature stresses, and to expansion and contraction thru alternate setting and drying. The right construction and proper placing of expansion joints in concrete structures is one of the greatest difficulties the concrete designer has to contend with. Cement concrete is also subject to chemical action and deterioration by apparently weak re-agents.

CONCRETE SUSCEPTIBLE TO SOIL ACTION

The 95 mile aqueduct that conveys 85 million gallons per day to the citizens of Winnipeg, has been constructed with the most careful grading of cement and aggregate of possibly any similar structure in Canada. Within a couple of years of completion it has to be protected from the destructive action of surface water by draining it away from contact with the cement thru vitrified clay pipe. The water of peat bogs and muskeg of comparatively mild acidity have also proved very detrimental to concrete and the fermentation of ensilage speedily attacks a porous concrete. Gases that contain sulphur and carbonic acid, such as sewage gas, fumes from oil and illuminating gas, smoke from locomotives and furnaces, especially when combined with moisture and a warm atmosphere are often very destructive to concrete, tho it may take five to ten years to make it apparent. Nominally pure ground water filtering thru a porous or cracked concrete has been proved to have a disintegrating effect on the concrete, as the lime compounds in cement are highly reactive with soluble organic matter. From experience, gained after ten years' observation of concrete drain tile in the city of Vancouver, it has been found that disintegration, and complete destruction of cement tile occurs more rapidly thru this agency than thru any action of sewage disintegration. This deterioration starts from the outside rather than the inside, and pipe buried in quicksand or any heavy water bearing strata is the first to succumb. Similar experiences have been personally noted in the cities of New Westminster and Edmonton.

DISINTEGRATION OF CONCRETE TILE

Another serious consequence results with the percolation of ground water into concrete tile. As the water gradually dissolves the cement, calcium oxide is formed and shows as the characteristic white chalky scale often noted on damp concrete structures above ground. In a concrete sewer pipe this scale forms an incrustation which entraps sand floating in the sewer and a compound like mortar results, which seriously impairs the smoothness and the carrying capacity of the pipe. The roughness of the surface of the pipe tends to hold sewage back, facilitating decomposition within the sewers and generating sewer gas, which in the warm and moist atmosphere of the

Editor's Note—Composed of extracts from an address by A. G. Dalzell at the nineteenth annual convention of the C. N. C. P. A. at Toronto, January, 1921.

sewer is presented to the already weakened concrete in the most effective manner to further the progress of disintegration and final destruction.

From any such defect the vitrified clay pipe is immune. Even a porous clay pipe admitting the passage of ground water thru its walls has nothing in its composition that will combine with the water to form an incrustation or scale to impair the smoothness of the pipe. If thru poor tile laying or a bad grade, sewage is decomposed in a vitrified clay pipe sewer, the resulting gas has no apparent effect on the pipe.

CLAY SEWER PIPE ARE SELDOM DEFECTIVE

Defects in vitrified clay pipe drains or sewers are seldom attributable to defects in the pipe itself, if the right grade of pipe has been selected, but are due, as a rule, to imperfect jointing, bad pipe laying, or excessive loading. If as much care was taken in the jointing and laying of clay pipe, as is taken with more expensive substitutes, a better and more sanitary sewer could often be secured at less cost.

Vitrified Clay Pipe drains should be well jointed and tested to a pressure equal to the maximum that they could be subjected to in case of accidental stoppage of the drain. When laid to a true grade, on a firm foundation, and properly protected from surface injury or accidental displacement they will make as good a sewer as any of the more expensive metal substitutes and will withstand natural decay and electrolysis to which the metals may rapidly succumb.

CLAY PIPE PRODUCT OF PROVEN WORTH

Vitrified Clay Pipe is a product of proved worth. It has the advantages that its composition must be such as will stand the severe ordeal of fire, and after it has passed thru this test its qualities are apparent and can be demonstrated by simple tests by any one. In the competing article the product is difficult to judge, and there is an ever-present temptation to take advantage of this and impose on the credulous. The process of manufacture is not one recommended by experts to secure the densest concrete, but has been devised to speed production and facilitate competition. If the densest concrete, such as was designed to carry, under pressure, the waters of Shoal Lake to the citizens of Winnipeg, has been found more susceptible to attack by mildly alkali surface water, one may well hesitate to submit to the severe, more crucial and unknown conditions of a city sewer system, the very thin walls of a concrete pipe not made under such ideal conditions. At the present time the manufacturers of vitrified clay pipe, striving to make a high class article, can confidently proclaim that they are making an incomparable product for the purpose it is intended to serve—an article tested by time, with a proved endurance and a peculiar fitness for the function it has to perform which, as yet, has been unapproached.

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Signs of the Times

The daily press has contained several items lately that show the trend toward the return to normal business. The monthly report of unfilled tonnage on the books of the U. S. Steel Corporation at the end of September showed the first increase over the preceding month since July, 1920. The Steel Corporation has also announced that it will spend \$10,000,000 in improving its plants. These facts show the upward trend of business, since the steel industry is always considered a barometer of the times.

The Standard Oil Co. also has announced that it will spend \$2,000,000 in improvements in New Jersey.

In addition the railroads seem disposed to reduce freight rates, in order to stimulate business. They seem at last to realize that a good volume of business at low rates will pro-

duce larger profits than a small business at high rates. The contemplated reduction in freight rates, especially since the railroads are planning on acting voluntarily is very welcome news to clay products manufacturers.

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Bricklayers Publish Interesting Journal

An extremely interesting and live organ is that known as the "Southwestern Bricklayer" and put out by the bricklayers of Texas. It is issued every month and contains interesting news and articles pertaining to the industry. The journal keeps the masons and bricklayers in touch with what is going on in the industry and also contains educational stories about the manufacture of clay products. An idea of what the magazine is can be gained

Extract from the Chicago Herald-Examiner

October 10, 1921

By Arthur Brisbane

You can buy brick in New York now wholesale at \$16 a thousand. That sounds cheap, compared with \$40 and more not long ago. It sounds dear compared with \$6 and \$8, the old price for ordinary brick. But the price of brick makes little difference when you consider the price of hauling. To haul a thousand brick less than fifty miles some railroads charge \$15, about 100 per cent. more than brick used to cost delivered not so long ago. They say, "Freight rates do not affect the consumer." They do, if you pay a cent and a half to carry one brick fifty miles.

from the contents of the September issue. This particular issue contains an article on "Why brick vary in quality, shape and size," a reprint of the monthly digest of the Common Brick Manufacturers' Association, a story on "Better lime," another on "Colored mortar," a treatise on the necessity of measuring materials to secure uniform appearance and strength, and other items likely to interest the bricklayer who subscribes to the paper.

It would be a good idea for the clay products manufacturer to become acquainted with what the bricklayers in the local unions are doing and to subscribe to the literature which they publish.

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Manufacturers Take Notice

We are in receipt of request from W. A. Mills & Co., 729 Fifteenth St., N. W., Washington, D. C. for the names of manufacturers of salt glazed brick. They desire a selling agency in Washington.

The Evans Builders Co., 921 Fifteenth St., N. W. Washington, D. C. are also desirous of hearing from the manufacturers of face brick east of the Mississippi River with the idea of obtaining a sales connection for the several offices they have thruout their territory.

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More Garages Than Houses Built in 1920

A total of 81,813 family houses were built in 196 cities of the United States in 1920, while in the same cities garages to the number of 93,121 were erected, according to a statement by the department of labor. In the 196 cities, which contain 32.7 per cent. of the country's population, \$1,204,400,764 was expended in building operations, \$40,522,240 of which was for construction of moving picture houses. The cost of building schools was \$50,231,440, a little more than half the cost of garages, the department estimated.

DECORATING CEMETERIES *with* TERRA COTTA TOMBSTONES

A New Field for Terra Cotta Products—Marketing Presents Serious Difficulties—Could be Made More Beautiful and Cheaper Than Stone

"I'VE GOT AN IDEA that's going to make money for us," said the office manager of the Terra Cotta Co., to the general manager one morning. "Just happened to think of it last night. You know, I have to pass the Oakwoods cemetery on my way to and from the plant, and last night, as I was riding by, looking at all the tombstones, I changed them all to works of terra cotta, in my mind's eye. Just think what that would mean to our industry, man, if we could secure the trade for only a part of the monuments put into the cemetery every year. I wonder why it has never been thought of before."

The general manager's face had by this time taken on an amused expression, "Don't flatter yourself that you are the first to have had this idea. I had the same thought myself several years ago, and it sounded good to me then. But it can't be done."

"But why not?"

CAN'T PUT TERRA COTTA IN CEMETERIES

"I'll tell you. There is no question that we could not make beautiful pieces and make them cheaper than the stone people make theirs, but we can't sell them. The stone people must have had an inkling of something of this sort coming up some day and safeguarded themselves against competitive materials by forming some sort of 'understanding,' to put it mildly, with the cemeteries to the effect that only stone monuments would be permitted. So you see we would be up against a tough proposition trying to find a market for our terra cotta tombstones."

"Just the same, I think it is a good idea," said the O. M. as he went back to his desk.

And so it unquestionably is. Look into a cemetery and see the rows upon rows of square granite blocks, grey or red, with a cold and severe appearance, bringing out no particular thought or sentiment, but just standing with apparent aloofness and in a disinterested way, inscribed in the conventional manner. Such a sight is certainly not conducive to any but a cold and sinking feeling with probably the thought, "They'll have to plant a heavy rock on my head to hold me down."

TERRA COTTA MONUMENTS WOULD BE EXPRESSIVE

What a contrast on the other hand would be a field of graves marked with beautiful ornaments expressing a sentiment, an idea, the warmth of feeling and reverence for the departed. All the skill of the modeling artist working in the soft, plastic clay, shaping it into the form that *you* feel is most appropriate, would be reflected in the finished piece. Whether the monument was to be used in the city or in the country would make no difference. The city with its soot and grime and dirt would not change the appearance of the work for with just a little effort it could be made bright and new again, in direct contrast to the dismal and gloomy appearance of the stone blocks after several years of city atmosphere.

These terra cotta monuments would not present any particular problem in their manufacture, for any difficulty of manufacture in this kind of clay working has already been solved

in the beautiful interior decorations in churches and public buildings, the difficult frieze work in many libraries and museums, and the delicate tints and exquisite color work in the many ornamental pieces now being manufactured by terra cotta companies.

COULD BE MADE CHEAPER THAN STONE

Not presenting extraordinary arduousness in the production, terra cotta tombstones could therefore be manufactured considerably below the present high cost of granite and marble which would be a benefit of which practically every one of us could some day take advantage. The combined assets of a more beautiful, more appropriate and cheaper piece would be convincing arguments in the sale of terra cotta monuments.

Evidently, at present, there is something in the way which makes it impracticable for terra cotta companies to enter this field. The potential market is undoubtedly great inasmuch as almost every civilized human is a prospective customer either directly or indirectly. The big question arising is whether the obstacles to be overcome in the marketing are so great that it would be unwise to make any attempt to place terra cotta tombstones in the cemeteries.

That terra cotta monuments are a practicable possibility can be seen from their successful manufacture and use in Germany. German clayworking ingenuity was working in this field to some extent before the war and since the end of that great struggle has increased its activity in this direction to a considerable extent.

DO NOT IMITATE STONE

Should the manufacture of artistic terra cotta tombstones be developed in America it is to be hoped that manufacturers insist that they should not be made in imitation of any stone but should rest entirely on their own merits, giving the artist every chance to utilize the advantages, and possibilities of the clay, and bring out the beauty which must necessarily remain harnessed when the terra cotta is used in counterfeiting a material by no means superior to it.

Immediately after the closing of the great war many cities desired to erect a fitting monument to the memory of its heroes who fought and made the supreme sacrifice. Is there any material which would lend itself more easily to the expression of the sentiments of the people and appropriateness of the tribute, than terra cotta? There is no material in which the ideas of the designing artist could find better expression, which is so versatile that it can be used with fitting reverence in the interior design of a house of worship and, across the street, to adequately portray the frivolous gayety and light-headed enjoyment of the theater.

If terra cotta can be used in the construction of a monument in patriotic memory of the boys who did not come back, why can we not also find appropriate expression of our sentiments for *one* who has gone forever?



"Carve the right kind of place in men's hearts and then you can safely leave to them the carving of the right kind of epitaph on your tombstone."

The BUILDING SITUATION

THE CONSTRUCTION OUTLOOK in the New England section for fall and winter operations is encouraging, with keenest interest expressed in the erection of apartments and dwellings. The last week in September showed actual contract awards totaling over \$4,000,000. The Boston material market shows the following conditions:

New York brick is selling for \$19 a thousand, delivered, while Connecticut production holds at \$21. Water struck, kiln run material is priced at \$30, on the job, and high-grade face brick, smooth and rough, is holding to a \$50 level for regular stocks and about \$5 advance over this figure for selected material.

DEMAND FOR FIRE BRICK WEAKENING

Fire brick is waning a little in call and distribution. No. 1 boiler brick is quoted at \$60, delivered, and higher grade stock at \$70. Fire clay maintains at \$25 a ton. Standard sewer pipe is now 50 per cent. off list, while double strength material is 35 per cent. off. Flue lining is 50 per cent. off, and wall coping, 45 per cent.

The call for hollow tile and terra cotta partition blocks is on the increase in the Boston district, with prices holding firm. Drain tile and other burned clay products are also enjoying greater call under the prevailing construction movement.

The Board of Directors of the Peabody (Mass.) Chamber of Commerce has organized the Peabody Housing Corporation, with Frank H. Sanger, head of the organization, as president of the new corporation. New homes will be built on a unit plan, another house being started as each one is sold. The first dwelling was commenced on September 19, and was disposed of on September 28.

AT PROVIDENCE

Active construction continues at Providence, with textile mills taking a marked lead in the call for brick, hollow tile and kindred burned clay products for proposed extensions; Woonsocket is particularly active in this line at the present time. Building supplies are holding at fairly high levels as compared with other New England districts, with common brick ranging at \$28 and \$30 a thousand, delivered. Face brick is from \$60 to \$65 for desirable selections and fire brick is priced at \$80 to \$100.

Sewer pipe, single strength, is 30 per cent. off list in the Providence market, while wall coping is selling for 32 to 96 cents a foot, the first noted being for nine inch material, and the latter for 18 inch stock. Flue lining shows no change, and four inch partition tile maintains at \$220 a thousand delivered, with eight inch material selling for \$390.

NEW YORK BREAKS RECORDS

The first eight months of the present year, for which accurate figures have now been compiled, shows a volume of construction exceeding the entire building record of 1920, and all previous records are being broken. Up to August 31, Greater New York operations, including all five boroughs, reached a total of \$262,613,269, as compared with the aggregate of \$237,933,269 for the entire year preceding. With a lead of \$24,680,121 and September rounding out another substantial total, the figure for 1921 will be well beyond the greatest anticipations of many in the trade.

NEW YORK MARKET ACTIVE

The answer to the current building boom in Greater New York, for a boom it is, is dwellings. The tax exemption ordinance, expiring April 1, 1922, has proved the biggest impetus to new work ever conceived. Brooklyn borough, taking the

lead, has new homes to a value of over \$65,000,000 in course of erection at the present time.

Increasing activity prevails in the New York building material markets. Common brick continues to occupy the pivot of interest, and large sales are being recorded. Practically all arrivals from the Hudson River points are being absorbed, with distribution averaging from 33 to 38 cargoes a week. The price is still fluctuating from \$15 to \$16, but all choice selections are being turned at the latter figure, with dealers asking \$18.50 and \$19, delivered on the job.

Face brick is following the lead of common material, and while growing sales and distribution are taking place, price levels remain quite uniform. Colonials are being retailed at \$45, with reds, both rough and smooth, selling at a like figure. Buff selections are in demand at \$50, and grays are topping the list at \$53 and \$55 a thousand.

Interior partition tile is selling for \$180 a thousand for 2x12x12 inch material, ranging to \$280 for 6x12x12 inch. Fire brick is being quoted at \$70 and \$75.

Brick prices in upper New York state are at levels, for the most part, quite in advance of New York City figures. At Albany, wholesale prices are around \$18, with dealers asking \$20 and \$21, delivered. Binghamton figures range from \$20 to \$23, while Buffalo dealers are asking from \$23 to \$25. Rochester has \$18 and \$20 brick, while Syracuse figures are practically the same.

NEW JERSEY CONSTRUCTION BOOMS

The month of September holds the record for building work at Newark, with a total volume of work approximating \$3,360,392, according to accurate figures compiled by the local building department. This is the highest total of any month of the year and the best period of any month since April, 1920, when the amount stood at \$4,208,409. With the September totals, the first nine months of the year show an aggregate of \$15,758,601, as against \$17,467,604 for the corresponding period of a year ago. The big housing movement now prevailing thruout the northern New Jersey district is responsible for the complete awakening of the industry and the prospects for the remaining months of the year are very bright.

Common brick is holding its position easily as the leader in demand. Newark dealers are selling the material from \$20 to \$23 a thousand, on the job, with salmon varieties at a lower figure. The \$17 figure for brick at the kiln still obtains in the Hackensack district.

South Jersey reports an increasing demand for common and face brick, with price range varying from \$18 to \$23 a thousand in the different sections. Trenton is holding to a figure of \$18 and \$20 on the job, while producers, such as the Independent Brick Co., one of the largest operators in that vicinity, are asking around \$17 at the kiln. Atlantic City is coming into the market strong for burned clay products, and a number of large building projects are absorbing materials there. A new brick high school, estimated to cost \$1,600,000, is now projected by the local Board of Education.

At Newark, the local bricklayers' and masons' organizations are perfecting plans for a "Build with Brick" drive, the campaign to last about five weeks. It will be inaugurated at an early date. Literature will be published and distributed to show the low cost of permanent brick construction, and house plans for such type of work will be furnished without cost as a part of the movement to stimulate brick operations to the greatest possible point.

BIG INCREASE AT PHILADELPHIA

Philadelphia is coming back into its own in construction operations. The month of September rounds out a total of \$4,304,570, for buildings of all kinds, with housing structures well in the lead. The popular two-story brick dwellings, top the building record for the month with a total valuation of \$1,542,435; one-story structures of the same type fall as low as \$12,200 for the period, while three-story brick dwellings stand at \$428,100.

Local brick manufacturers report a fair demand for material, with small operations far in the majority. Prices on the job are about \$16 for hard common and \$12 for salmons. Second-hand material is very plentiful and the different house-wrecking companies are offering quantities of anywhere from 200,000 to 1,000,000 for immediate delivery.

Paving brick has been in far more active call in recent weeks, particularly in the outlying districts. High freight rates have proved rather a handicap to the sale of this material, and present figures vary from \$50 to \$70 per thousand. Manufacturers are optimistic as to the future and there is no noticeable lull in production.

BALTIMORE CONSTRUCTION IMPROVES

Building operations at Baltimore continue on the upward trend. Total permits during the month of September, just closed, show work to a total of \$2,574,600, with two story brick dwellings developing a big point of interest. Houses of this type reached an aggregate of \$213,000 for the period, while other structures brought the total to over \$500,000, for this character of work.

The local material market is rather spotted in character, and there is not quite the interest displayed in immediate sales as desired. Common brick has declined from \$23 to \$21, delivered, while front brick of good character is securable at around \$35. First grade face material is being sold at \$45 and \$54. Fire brick is at \$70 and \$75.

To create increased construction activities, the Industrial Bureau of the Merchants' and Manufacturers' Association is arranging plans for a local Conference of Construction Industries, and all local building organizations will be represented in the movement. Representatives will be appointed from the various trade bodies and a series of meetings held at an early date.

PITTSBURGH OPERATIONS

Much encouragement is being afforded the brick manufacturers of the Pittsburgh and Tri-State district by the apparent resumption of commercial and speculative building. While the past week showed a decided slump in the value of building permits applied for at the city bureau of building inspection, it is believed that this is merely a lull and that building activities are almost in full swing. During the past two weeks 212 applications for permits were filed for work to cost more than \$1,500,000.

Demand for brick for road construction is not heavy, but the building situation is a source of optimism. Most of the applications for permits were for dwellings and but few frame constructions are included in the list, most of them being for brick, brick veneer, brick and shingle and brick and stucco houses. Considered a forecast of other similar projects, it has been announced that one builder here has purchased vacant property in one of the exclusive residence sections of the city and will erect 12 brick houses, each to cost \$10,000.

THE COLUMBUS SITUATION

Building operations in Columbus, Ohio, are fairly well maintained despite the general business depression. This is shown by the report of the Columbus Building Department for September and for the first nine months of the present year. Dur-

ing September the department issued 447 permits having a valuation of \$732,940 as compared with 224 permits and a valuation of \$823,360 in September, 1920. During the nine months that have passed the department issued 3,788 permits having a valuation of \$7,557,175, as compared with 2,197 permits and a valuation of \$8,785,905 for the corresponding period in 1920. During September a total of 106 permits for dwellings were issued as compared with 20 in September, 1920. Many dwellings are being started in October to be completed before cold weather. Outside of the corporation limits the construction of dwellings is active and it is believed that fully 50 per cent. of the number erected within the city limits are being constructed outside in the various suburbs. With good weather prevailing it is expected that active work will go on until December 1, if not later.

CLEVELAND HAS BRIGHT PROSPECTS

More optimistic view of the building situation in the northern Ohio district is taken by brick, tile and material interests as well as the construction industry generally, with the advance of October and the coming to the fore of new large projects as well as housing development.

The outstanding projects are the Wade Park Manor and the East Boulevard apartment undertakings, the former costing \$4,500,000 and the latter \$1,500,000. Several large lease transactions have been closed, all of a business character and some of these call for the early erection of commercial buildings, few of which will cost less than \$100,000.

The total of building operations either started or planned in September shows a gain of \$1,000,000 over August. Altogether better than \$3,965,000 building was contemplated or started during the month. At this rate if continued thru the balance of the year, something approaching the \$55,000,000 mark, attained during the first nine months of 1920, will be realized if not exceeded, experts believe. A total of 1,055 separate projects were involved during September, 158 of which were dwellings.

MATERIAL PRICES LOW

Not a little of this improvement is believed to be due to the low level of material prices, a low price level that is not equalled by other cities of the country, with one exception, Chicago. Common brick in Cleveland has reached the low figure of \$14. Brick, tile, cement, lime and other materials are but nine per cent. higher than in 1917, yet the materials industry is staggering under unprecedentedly high freight rates.

Prediction was offered by E. C. Roberts, of the Cleveland Builders Supply & Brick Co., that higher prices may be expected, since so much of the price must be turned back to the railroads for carrying charges.

A joint meeting was recently held by the Cleveland Builders' Exchange and Cleveland Real Estate Board, to formulate plans for conducting an aggressive building campaign thru the winter.

Carl R. Brown, secretary of the Building and Loan Association League, stated that building and loan companies are loaning heavily on construction projects, mostly for home building.

CHICAGO BUILDERS WILL ENFORCE LANDIS DECISION

Employers in Chicago are determined that the unions' live up to the award made by Judge Landis. All work which has been held up on account of disputes in regard to the decision will be begun and where union men will refuse to work their places will be filled with non-union men. This was the statement of E. M. Craig following a meeting of 14 civic and commercial organizations which have gone on record in support of the award. Mr. Craig said the builders were experiencing no difficulty in obtaining plenty of men to carry on the work of the carpenters and the composition roofers, two of the trades which have stayed outside of the agreement.

(Continued on page 601)

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

SILICA—SPINE OF CERAMIC WARE



DURING an investigation made of the actual quantities of body materials used in 33 American potteries, it was found that flint represented on the average 32.06 per cent. of the total body materials. For one year these 33 potteries used 57,173,649 pounds of flint. Due to the fact that this latter figure represents the quantity of flint used by only 33 plants, which is but a small part of the total number of establishments in this country, these figures are not as significant

as the other figure which shows that the average American pottery uses flint to the extent of almost one-third of the entire body ingredient.

The percentage of pottery body materials used in 33 American potteries is found to be the following proportions:

	Per cent. of total body materials.
China clays	38.90
Ball clays	14.88
Flint	32.06
Feldspar	14.14
Cobalt oxide .....	.02
Total	100.00

From this it is readily seen that flint is a very important pottery ingredient. Flint is the term usually adopted in pottery making, altho it may not actually be such. Silica is the correct term to use. Silica for pottery manufacture is usually found in the form of flint, sand or quartz rock.

FLINT AMORPHOUS FORM OF SILICA

True flint is an amorphous form of silica. It is found in the form of pebbles or boulders in the chalk cliffs of England and on the coast of France.

Silica in the form of quartz is crystalline. It is found in the form of rock and sand, and in this country obtained largely from Illinois and Pennsylvania.

Amorphous silica has a specific gravity of 2.3. It combines very easily with alkalis. Crystalline silica has a specific gravity of 2.6 to 2.7 and is not easily influenced by alkalis. If crystalline silica is heated several times for certain periods of time it may be transformed into the amorphous form. These changes produce a corresponding modification in volume, as an equal weight of amorphous silica occupies a volume 16 to 17 per cent. greater than crystalline silica. It is

this volume change which explains in some cases cracking, dunting, and swelling of ceramic ware.

CARE IN PREPARATION NECESSARY

It is essential that flint or silica be of a high degree of purity, and must be especially free of injurious quantities of iron oxide. If care is not taken in the preparation, the crushed material may be contaminated by fine iron particles, introduced by the crushing machinery. This tends to discolor the ware or produce brown specks.

Silica, whether in the form of quartz, sand or flint, must be crushed, calcined, and ground very fine. Uniformity in grinding is quite essential.

Silica is the skeleton of white earthenware body. It reduces shrinkage in drying, and due to its refractoriness, it gives the body a certain rigidity opposing deformation due to softening during firing. Moreover, the introduction of silica in a body gives it porosity, which permits the escape of steam, carbon dioxide and other gases during the periods of burning previous to vitrification. Other things being equal, a change to a finely ground quartz tends to the cracking of ware and increases the biscuit loss. On the other hand, a change to a finely ground quartz tends to the cracking of glaze which is applied for the body.

ENGLAND IMPORTS FLINT FROM FRANCE

It is interesting to know that in England the best flint is imported from France, altho English flint is available. In Germany, some Danish flint is used especially for glazes, but the great bulk of the flint is obtained from domestic sources. The potteries in the Carlsbad district and many others in the Selb district in Bavaria use chiefly flint from nearby sources. Much of the flint comes in the form of sand. There are several extensive sources of pure flint sand, notably at Herzogenarth near Wachen, or Aix-la-Chapelle, in the Rhine province (99.97 per cent. silica); at Lautitz near Hohenbocka, in Thuringia (99.76 per cent. silica); and at Dorentrupp in the principality of Lippe (about the same percentage of silica).

The center of the china industry of Austria is in the Carlsbad district of Bohemia. These potteries use practically the same materials, mostly from the same sources, and the same methods of preparation as German potteries.

OPINIONS OF AUTHORITIES ON FLINT

References on the subject of flint are quite rare and incomplete, so letters asking for a few brief remarks in answer to certain questions directed on this subject received the following replies from three very prominent authorities on raw ceramic materials.

Charles F. Binns, Director of the New York State School of Clay-Working and Ceramics at Alfred University, Alfred, N. Y., formerly a potter, and one who has had considerable experience in the whiteware industry, writes:

"The following is a brief statement in answer to your questions. The subject is quite a broad one, and there is scarcely time to do it justice. I refer you to an article in the Journal of the American Ceramic Society, Volume III, page 722, by A. S. Watts.

"The requisite of flint for glaze is simply purity. The source is immaterial because the silica is dissolved in the glaze anyway. The size of the grain is not important because the whole glaze is ground before using.

THREE SOURCES OF COMMERCIAL FLINT

"For body use the nature of the flint is important, but less so in high temperature wares such as porcelain and china, because all flints when strongly heated tend to assume similar properties.

"There are three sources of commercial flint, rock quartz, sand and French pebbles. Of these, the quartz is the purest. Sand is quartz crushed by natural processes, so that except for the fact that the sand is not as pure as the quartz, the behavior is the same. Both are crystalline, and the grains expand upon heating.

"French pebbles are imported from the shores of the English Channel. This is the only kind of flint used in the English potteries. The material is not crystalline, nor is it amorphous. It consists of tiny spicules of organic origin imbedded in a silicious mass. This flint undergoes smaller changes in firing than does the crystalline form and is, therefore, more suitable for earthenwares and sanitary ware. It almost always contains a small percentage of lime, but this is not detrimental if it does not exceed one or two per cent.

HARD TO PRESCRIBE GRAIN SIZE

"The size of grain of the flint is not easy to specify. The ground material as received from the millers is presumably ready for use. This generally corresponds to about 1,100 on the Jackson-Purdy surface factor test. It is not fine enough for porcelain or china, for which wares it should have a surface factor of 1,500 or 1,600. Tests by means of screens are unsatisfactory and elusive. In no case is the grain uniform thruout. The largest grains pass thru 100 mesh, the smallest range from one hundredth of a millimeter downwards."

C. W. Parmelee, Professor of Ceramic Engineering at the University of Illinois, Urbana, Ill., who has also had much experience in bodies and glazes, states:

"I am not aware that the pottery trade makes any distinction in the character of the silica which is used for the different grades of ware mentioned, namely, china, electrical porcelain, low grade chinaware and sanitary pottery, insofar as the size of grain and purity and uniformity of size are concerned. The potting trade is supplied by the millers of quartz sand almost to the exclusion of imported flints, and there is such an abundance of high grade sand available that it is hardly necessary to attempt to secure material of different grades for the specific purposes mentioned.

HOW FLINT IS OBTAINED

"It is quite possible to secure sand which contains over 99 per cent. silica and three per cent. or less iron and alumina. The lawn which is ordinarily used seems to be 140 mesh, and no attempt is made to secure a uniformity of size of grain.

"The 'flint' obtained by the milling of imported pebbles is less pure than the ground sand because of a content of lime. I do not think that there is any difference in the size or shape of the grains of this material as compared with the ground quartz. There is a difference between ground quartz sand and ground calcined flint, in its action in bodies and substitutions of one for the other should not be made without careful experimental work prior to such a change. This is particularly true of high 'flint' body. Of course, a high grade of silica is desirable in that the less iron is present in the body the better the color presumably, altho the form in which the iron is carried has a very marked influence upon the development of color."

A. S. WATTS GIVES OPINION

Arthur S. Watts, Professor of Ceramic Engineering at Ohio State University, Columbus, Ohio, who has made a

considerable number of investigations of raw material, and who has perhaps given this subject more study than any other man, states:

"Approximately 85 per cent. of the silica or flint used in the manufacture of ceramic wares in the United States is produced by pulverizing silica sand, which occurs as a loosely bedded sand rock in Pennsylvania around Lewistown and Garnet, along the lines of the Pennsylvania; also near Berkeley Springs, W. Va., not far from Steubenville, O., and in the neighborhood of Oregon and Wedron, Ill. This silica is practically all pure quartz and is not altered in any way except to be pulverized prior to its sale to the industries. The remaining 15 per cent. is divided between the following three forms of silica:

"(a) Crushed quartz rock, which has been calcined at about 1,000 degrees in order to weaken the rock structure.

"(b) Pulverized French flint pebbles which are the silica nodules cast up from the ocean bed along the west coast of Europe, and which are supposed to be either amorphous silica or crypto-crystalline silica. These pebbles are likewise calcined, which weakens their structure and permits them to be pulverized in a ball or tube mill by grinding with similar pebbles which have not been calcined.

QUARTZ IS ALTERED BY CALCINING

"(c) Chalcedony, which is mined in Missouri, and I think in southwestern Illinois, is a recently introduced material, which is receiving some attention at the present time. Chalcedony is crypto-crystalline and may be found a suitable substitute for the calcined French flint pebbles above referred to.

"There is some controversy at present as to the value and importance of the crystalline form of the silica introduced into the ware. By calcining the quartz is altered a limited degree to tridymite, and this is claimed by some to reduce the stain and the sensitiveness to temperature change, which is one of the forms of silica-bearing ceramic products. For electrical porcelain sanitary ware and earthenware, a slightly inferior color of silica sand could be employed, but the standard product produced by grinding the above mentioned sand is more than 99 per cent. pure silica, and this is obtainable in such quantity that there is little or no market to the ceramic industry for an inferior color of silica. It is very questionable whether the silica or flint used could be too finely pulverized. In general the finer the pulverization the more complete the distribution and the less heat is required for vitrification. I refer you to the specifications for feldspar and flint which I submitted to the American Ceramic Society and which were published by them under the issue of September, 1920, page 725, Journal American Ceramic Society."

* * *

Stacy-Trent Hotel at Trenton Opens

The leading pottery center of the eastern district, Trenton, N. J., has its long-needed new hotel. The hostelry, known as the Stacy-Trent, opened its doors to the public on September 21, and represents the last word in the line of modern hotels. More than 1,000 persons attended the reception given by the management on the opening day, and many of the leading potters and manufacturers of other ceramic products were among them. In the files of *Brick and Clay Record* of many months ago, frequent reference was made to the support given the then projected hotel by the pottery interests of the city, which tendered large stock subscriptions to the fund that was raised to erect the new hotel on its prominent site in the heart of the city on West State Street. All ceramic products used in the new hotel, including chinaware, sanitary ware, floor and wall tile, and so forth, were furnished by local manufacturers, as well as

the brick used in the construction. The over-night visitors at Trenton, and many of them men in the ceramic industry, will not have to worry in the future as to where they will "put up" for the night.

* * *

Indications of the Fall Trade

Operation of potteries in the East Liverpool district for the month of September have been on far better schedules than for many months. From present indications, the output of the district for October will be greater than that of September. The situation could hardly be otherwise on account of the season.

The trade as a whole has been anticipating fall requirements in a rather liberal manner, and of course this is reflected in the operation of the different plants. There has been a gradual increase in shipping out of the East Liverpool, Chester and Newell territory, and this in itself is proof that buyers are wanting merchandise.

There was a noticeable increase in the demand for dinnerware a few weeks after the new selling lists became operative. Buyers had been holding off, buying only immediate requirements all during the summer, and there was a period when practically no business was coming in at all. At that time the warehouses were pretty well filled, and while decorators were kept busy, clay and other departments were idle.

Practically every pottery in the East Liverpool territory is now in operation. Some are working not less than half time, while there are some shops doing much better than this. On the whole, however, it is generally conceded that the district as a unit is operating close to 75 per cent. of capacity.

The majority of the manufacturers have started to arrange their new patterns for 1922, but these will not be presented to the trade until late in December or in January. Border patterns of course will predominate on all plain shapes, while new sprays have been stocked for the fancy shapes.

The western trade has been more active in buying than the East. There has been an improvement in the demand for generalware from the South. The Northwest seems to have been holding its own, altho there is some room for improvement in that section.

All in all, the East Liverpool pottery district is rounding into its old time form gradually but steadily. The trade line now has a decided upward tendency.

* * *

Germany Shipping Much Ware to U. S.

German ceramic manufacturers are shipping a lot of ware into the United States, and the most recent official statistics available show that for eight months ending August 31 last, the manufacturers of that country shipped ware valued at \$1,244,362 into the United States, and for the same term ending August 31, 1920, the imports of German ware amounted to \$484,566. The increase of 1921 over that of 1920 is \$759,796.

In August last, Germans shipped ware to the United States valued at \$242,120 and for August, 1920, these shipments totaled \$126,988, or an increase in favor of August, 1921, of \$115,132.

All other countries shipping ceramic ware into the United States during August last show declines in values, when compared with the shipments and imports for August, 1920.

Japan in August last year shipped ware to the United States valued at \$611,781, and for August, 1921, its shipments fell off to a total volume of \$428,419, a loss for comparative months of \$183,362.

The last eight months show a decrease of Japanese imports when compared with the same period in 1920 of \$379,809.

For eight months ending August last, there were imported into the United States ceramic wares having a listed valuation of \$8,044,098, the ware coming from several countries of Europe and Japan. This represents an increase of \$851,006 over the same period in 1920.

There has been quite a falling off in the receipt of ware from England during the last few months. In August, 1920, the imports from that country were valued at \$385,687, while the imports from that country during August last had a valuation of \$150,414, or a loss of \$235,273.

* * *

Bank Publicity Eulogizes Tile

In connection with a publicity campaign for the advancement of the city, the Fletcher American National Bank of Indianapolis, Ind., makes particular mention of ceramic tile and the prominence of the city in this line of production. It points out that the local plants produce over 1,500,000 square feet of tile per annum, with an aggregate value, when laid, of nearly \$2,000,000. Continuing, it says:

"Indianapolis industry introduced one of civilization's oldest arts to American soil, for the city boasts the first and one of the largest tile factories in the country. Clay from Maine, Florida, Georgia, the Carolinas, Kentucky, Virginia and England are merged according to specific formulas to produce a single Indianapolis-made tile. Every part of the entire world contributes the chemical oxides used in producing the brilliant colors. And the tile made here is shipped to all quarters of the world, even to those countries which were famous for their tiles long before the establishment of the industry in this country."

* * *

Establishes Unique Plant in Florida

The H. A. Graack & Son Pottery at Bradentown, Fla., is an interesting plant, conducted by H. A. Graack, who is from Kolding, Denmark. While traveling over this country he saw that there were possibilities for a pottery in Bradentown, and after testing the clay he decided to locate there. He remodeled the old pottery which was located there and built an up-to-date and attractive display and sales room. Novelty ware, souvenirs, etc., are turned out at the plant, and all articles are molded by hand by Mr. Graack and his son. Mr. Graack has some highly skilled artists working in his decorating department, and beautiful pieces of ware are turned out. Many outside orders for the pottery have been received, and novelty gift shops and jewelry stores especially find the articles turned out there attractive. During the winter Mr. Graack expects to experiment with different colored clays, hoping to turn out something special in the line of decorated pottery.

* * *

Ceramic Interests Start Industrial League

Ceramic and other manufacturing interests at Perth Amboy, N. J., have organized a new association, to be known as the Perth Amboy Industrial League, with the object of providing for the general welfare of the men and boys employed in the different industries in the city. Athletic contests and games will be arranged and other sports developed. Herbert Hooper, of the Roessler & Hasslacher Chemical Co., has been elected president of the league, and William H. Hallahan, Atlantic Terra Cotta Co., first vice-president.

Course in Pottery Firing at Trenton

The School of Industrial Arts, Trenton, N. J., is arranging for a course of lectures on the subject of pottery firing, including the burning of clay products, firing of boilers, firing efficiency and the like, covering in all a total of 25 addresses. The series will be conducted under the direction of Joseph Johnson, ceramic engineer at the plant of the Trenton Potteries Co. It is expected to inaugurate the course late in October.

* * *

Oil Burning Increases in Favor

Four new concerns have decided to decrease manufacturing costs by installing oil burners on their kilns, the new plant of the Wheatley Pottery Co., of Cincinnati; Zanesville (Ohio) Stoneware Co.; John Douglass Sanitary Pottery Co., Cincinnati, and the Colonial Pottery Co., of East Liverpool. According to these manufacturers, by the use of these oil burning systems, 25 per cent. is saved in the cost and consumption of fuel; 75 per cent. saved in power cost and 90 per cent. in wear and tear on kilns, and also a large percentage in loss of ware thru firing.

The adoption of oil burners in the East Liverpool district is growing, and it is believed by manufacturers that more kilns will be on oil during the coming winter than ever before, all of which will insure work when a shortage of gas develops.

* * *

Rob Company of \$1,000 Payroll

The Mosaic Tile Co., Matawan, N. J., sustained a loss of \$1,000 on September 17, thru bandits holding up the paymaster and taking the weekly payroll at the plant.

* * *

U. S. China Increases Capital Stock

The U. S. China Co., of Chesterton, Ind., has increased its capital stock from \$200,000 to \$875,000, and changed the name of the corporation to the American China Products Co. It was also decided to increase the number of directors from seven to nine.

* * *

Will Build Plant Addition

The Star Porcelain Co., Muirhead Avenue, Trenton, N. J., manufacturer of electrical porcelain products, is taking bids for the erection of a one-story plant addition, 50x82 ft., to be used as a slip house.

* * *

Demand for Stone Ware Increases

The Woodbridge (N. J.) Ceramics Co., manufacturer of sanitary earthenware products, is now maintaining capacity operations at its plant. The company reports a noticeable increase in demand for sanitary ware.

* * *

Discontinues Operations

The plant of the Brunt Tile & Porcelain Co., located in Chaseland, a suburb of Columbus, Ohio, was closed down about the middle of September indefinitely. According to the general manager the plant may be down for two or three months, depending on conditions and demand. A number of improvements to the plant have been completed and it will be ready for operation at a moment's notice. Electrical equipment is the principal product of the plant.

New Jersey Company to Build Addition

The New Jersey Porcelain Co., Pennsylvania Avenue, Trenton, N. J., has filed plans for the erection of a new one-story plant building.

* * *

Open Ceramic Classes in Trenton School

The School of Industrial Arts, Trenton, N. J., making a feature of evening classes in ceramic instruction, opened for the 1921-1922 season on Monday, September 19. Frank Forest Frederick is director.

* * *

Steubenville Pottery Is Operating

The Steubenville (Ohio) Pottery is operating at 75 per cent. of capacity, a report states. The "making" department is operating at two-thirds, while the decorating department is practically at full capacity. The company's traveling men are now on the road with an attractive line of samples, and it is hoped that business will improve.

* * *

Terminates Six Year Rest

The opening of the Hilfinger Pottery at Fort Edwards, N. Y., will terminate a period of idleness lasting six years. When Alex Hilfinger, senior partner of the firm and in charge of the actual manufacture of the ware, began to suffer from ill health, the business was permitted to fall into inactivity. The increasing demand for the ware thruout the country is responsible for the decision to reopen the plant.

* * *

Resumed Full Operation

The Standard Sanitary Mfg. Co., Pittsburgh, Pa., has recently resumed operations at its local plant under a full time schedule. The company has also opened up its branch sanitary ware plant at Louisville, Ky., effective October 10, giving employment to about 100 men. This number will be increased gradually to a working quota of about 350 operatives. Theodore Mueller is manager at the last noted works.

* * *

Jeffrey-Dewitt Changes Hands

The Jeffrey-Dewitt Co., Detroit, Mich., which has been making a special type of insulator for the Champion Spark Plug Co., Toledo, Ohio, has been taken over by the Champion Porcelain Co., a new concern capitalized at \$750,000 and controlled by the Champion company. J. A. Jeffrey will be president and M. C. Dewitt, vice-president.

* * *

Will Open Wholesale Chinaware House

R. D. Goodwin, with the Memphis (Tenn.) Queensware Co. for many years before he retired and went to Florida for his health, has returned to Memphis much improved and towards the end of the present year will open up a new wholesale chinaware and queensware business in a new brick building lately completed on Union Avenue between Main and Front Streets.

* * *

The Atlantic Terra Cotta Co., New York City, with plants on Staten Island and in the Raritan River section of New Jersey, has declared a dividend on its preferred stock of one per cent., payable October 15.

CURRENT PRICES of COMMON BUILDING BRICK
DRAIN TILE and HOLLOW BUILDING TILE

WE HAVE CHANGED our base price on drain tile from four inch to six inch, as we find the latter size forms a better barometer of that commodity, and that it will serve more manufacturers. There are 40 changes this month, 16 of which are in common brick. This is a smaller number of changes than usual, and it is very encouraging to find that six of the 16 changes in common brick, amounting to 37 per cent., are upwards. This is an excellent indication and shows the result of the publicity given by the Common Brick Manufacturers' Association to the fact that many manufacturers have been selling below cost. One of the noticeable changes is the increase of the common brick price at

New York from \$17.50 to \$18. This is in line with the predictions which have been made in previous issues of this magazine, under the column headed Building Situation, that there would be a shortage of brick in New York this winter, and that an increase in price was due. Drain tile shows eleven changes all downward, due no doubt to a limited demand by the farmer. In arriving at the number of changes of prices in drain tile, we went back over our records and compared our six-inch prices a month ago with those of the present, feeling sure that changes in prices for six-inch are almost in direct proportion to the changes in prices for four-inch. Hollow tile shows 13 changes, only one of which is upward.

Table with 4 columns: City, Common Brick Per M, Drain Tile (6") Per Ft., Hollow Tile (5x8x12) Per M. Rows include Portland, Me., Boston, Mass., Providence, R. I., Hartford, Conn., New Haven, Conn., New York City, Albany, N. Y., Utica, N. Y., Syracuse, N. Y., Oswego, N. Y., Binghamton, N. Y., Elmira, N. Y., Rochester, N. Y., Buffalo, N. Y., Jamestown, N. Y., Allentown, Pa., Erie, Pa., Philadelphia, Pa., Reading, Pa., Pittsburgh, Pa., Scranton, Pa., Newark, N. J., Paterson, N. J., Trenton, N. J., Wilmington, Del., Washington, D. C., Baltimore, Md., Norfolk, Va., Richmond, Va., Huntington, W. Va., Fairmont, W. Va., Wheeling, W. Va., Atlanta, Ga., Miami, Fla., Tampa, Fla., Louisville, Ky., St. Petersburg, Fla., Lexington, Ky., Memphis, Tenn., Nashville, Tenn., New Orleans, La.

Table with 4 columns: City, Common Brick Per M, Drain Tile (6") Per Ft., Hollow Tile (5x8x12) Per M. Rows include El Paso, Tex., Houston, Tex., Dallas, Tex., Little Rock, Ark., Oklahoma City, Okla., Cincinnati, Ohio, Cleveland, Ohio, Columbus, Ohio, Toledo, Ohio, Detroit, Mich., Evansville, Ind., Fort Wayne, Ind., Indianapolis, Ind., South Bend, Ind., Terre Haute, Ind., Bloomington, Ill., Chicago, Ill., Moline, Ill., Peoria, Ill., Green Bay, Wis., Milwaukee, Wis., St. Paul, Minn., Davenport, Iowa, Des Moines, Iowa, Sioux City, Iowa, Kansas City, Mo., St. Louis, Mo., Lincoln, Neb., Denver, Colo., Butte, Mont., Los Angeles, Calif., San Diego, Calif., San Francisco, Calif., Portland, Ore., Seattle, Wash., Cheyenne, Wyo., Winnipeg, Man., Toronto, Ont., Halifax, N. S., Quebec, P. Q.

Editor's Note.—The prices of the commodities listed above are reported as delivered on the job, and are, therefore higher than the plant prices. These prices are obtained from a sister publication, Building Supply News, and are sent to this paper by dealers in the various cities listed. Brick and Clay Record will appreciate any corrections. The prices marked in heavy type denote changes from last list.

*Little Rock, Cincinnati, Los Angeles, Atlanta, f. o. b. cars.
‡Philadelphia, Baltimore, f. o. b. job, manufacturers retail price.
§Los Angeles, Heath tile; Butte, per ton at yard.
@Hollow tile, Houston, car loads.
‡Hollow tile, Rochester—6 cell.

The SUPERINTENDENT

Helpful Hints for Practical Men
Whose Problem is Maximum
Production With Minimum Cost

Observations of an Attempt to Burn Clay Products With Powdered Coal

For several years now considerable thought has been given by different men in the clay industry to the possibility of burning clay products with powdered coal. The development of this method of burning and the success it has attained in boiler plants, because of its great economy, has spurred on the efforts to apply this method of firing more generally and to other installations.

In the clay industry there has always arisen the objection of the deposition of the ash upon the clay ware when burning powdered coal. Manufacturers have said when this problem was solved the use of powdered coal might be applicable to the industry. However, no experiments of record have been made heretofore, and the industry has been waiting for some one to make the initial attempt.

An initial attempt has been made, and the experiment will be of interest to every one connected with the clay business. What follows is an account of an initial experiment which undoubtedly could be improved upon, since every first attempt always reveals imperfections that experience will soon remove.

The experiment was conducted at the plant of the Parker Russell Mining & Manufacturing Co., St. Louis, Mo., manufacturers of refractories, and by the American Pulverizer Co., to test out the theory of the latter concern that pulverized fuel can be profitably used by clay products plants.

The experiment was conducted under the supervision of B. W. Morris, superintendent of the Parker Russell Mining and Manufacturing Co.'s plant, and in co-operation with the American Pulverizer Co., Paul S. Knittel, engineer in charge.

A small kiln in which special shapes and gas retorts are usually burned was chosen for the experiment. This was filled with standard nine-inch firebrick and a pulverizer installed adjacent to the plant for the grinding of the coal for combustion purposes. The kiln measures 11 feet long by four feet wide inside, and has a nine-foot wicket at one end. This high wicket is necessary because of the high gas retorts which are usually burned in this kiln. The burner was introduced thru the wicket about two feet from the top, a four-inch pipe being used to convey the powdered

coal. A pocket was built opposite the burner for a depth of eight feet, two feet wide by two feet high. This pocket was bricked up and covered on top with three-inch tile.

The American Pulverizer started operation at eight A. M., August 2, and closed at three P. M. on August 5, with an in-



Installation of Bin and Crusher for Pulverizing Coal at Plant of Parker Russell Mining and Manufacturing Co.

termission of seven and one-half hours due to an accident to the machine caused by lack of proper attention.

When following the usual method of firing, this kiln requires two days for water-smoking and two days to complete the burn. By using powdered fuel in this experiment, the entire burn was completed in three days.

The coal requirement used ordinarily for firing the same capacity of ware, which is fourteen tons, is 14,000 pounds.

Maximum Speed for Firing During Vitrification

Vesicular structure, i. e., a spongy formation in the clay, is produced, not only by excessive temperature, but by longer continued burning at lower temperatures as well. The selection of a particular rate of burning must take into account, the character of the clay, the size of the product to be fired, and the volume of material to be fired in one unit. For most purposes, the rates of firing should be between ten to 35 deg. C. or 20 to 70 deg. F. per hour.

The greater the tendency of a clay to produce vesicular structure, the lower should be the burning temperature, with a corresponding increase in time. For this purpose, it is necessary to know the temperature limits within which the time factor becomes effective. A speed of vitrification for a given clay in general, is greatest at the highest temperature, and the most rapid rate of heating. Probably 25 deg. C. or 50 deg. F. per hour is the maximum rate at which firing should take place under any conditions during the vitrification period of a clay.

In this experiment, however, this quantity was reduced to 6,750 pounds, or less than one-half. The brick three feet from the wicket were burned extraordinarily hard, but toward the bottom and near the wicket they showed a lighter burn.

On the bottom of the kiln there was found a deposition of about two inches of very fine ash resembling ground talc. However, on some of the ware there were found slag icicles. These, of course, are objectionable, but it is thought that by building a different type of combustion chamber difficulty from this source might be eliminated.

The experiment showed that a reduction in burning time, together with a considerable saving in fuel requirement, is possible. Moreover, a very hot atmosphere can be produced. Furthermore, it is believed that by further experiment it may be quite possible to eliminate the obstacles, or at least reduce them to the point where the application of powdered coal in burning clay ware is made successful.

Any person interested in further details and description of this experiment can obtain them by writing to the American Pulverizer Co., attention P. S. Knittel, at 18th and Austin streets, St. Louis, Mo.

✕ ✕ ✕

Production of Cement in 1920 Gains

The production of Portland cement in 1920 was 100,023,245 barrels, exceeding that in 1917, the next highest year in production, by 7,509,043 barrels. This amount was an increase of 24 per cent. over the production in 1919—80,777,935 barrels. The stocks at the mills increased from 5,256,900 barrels at the end of 1919 to 8,941,046 barrels at the end of 1920.

The shipments in 1920 amounted to 96,311,719 barrels, valued at \$194,439,025, as compared with 85,612,899 barrels, valued at \$146,734,844, in 1919, an increase in quantity of 13 per cent. and in value of 33 per cent.

There were increases in production in all the commercial districts and increases in shipments in all except three as compared with 1919, and yet the estimated Portland-cement manufacturing capacity utilized during the year was only about 66 per cent.

In 1920 the average factory price per barrel for Portland cement in bulk was higher in all the districts and ranged from \$1.83 in Indiana and in the Illinois and western Indiana district to \$2.46 in Michigan; in 1919 it ranged from \$1.62 in Illinois and the Illinois and western Indiana district to \$2.08, the average in Oregon and Washington.

The average factory price per barrel for the whole country was \$2.02 in 1920, as compared with \$1.71 in 1919, an increase of 31 cents per barrel, or 18 per cent. This is the highest average price on record since 1892. The lowest average price recorded was \$0.813 in 1909 and 1912.

The combined production of natural and pozzuolan cements in 1920 was 767,481 barrels, valued at \$1,150,890, as compared with 528,589 barrels, valued at \$583,554, in 1919. In 1920, 8 plants reported production of natural cement and 1 plant made pozzuolan cement.

The exports of hydraulic cement from the United States in 1920 were 2,985,807 barrels, valued at \$10,045,369, or \$3.36 per barrel, as compared with 2,463,573 barrels, valued at \$7,513,389, or \$3.05 per barrel in 1919, showing an increase in quantity of more than 21 per cent. and in value of nearly 34 per cent. The exports were sent principally to South America, the West Indies, Central America, and Mexico.

✕ ✕ ✕

E. Dussard Moves to New Location

E. Dussard & Co. have taken up new premises at 243 Plessis St., Montreal, where a complete line of ceramic, porcelain and roofing tiles, etc., will be carried.

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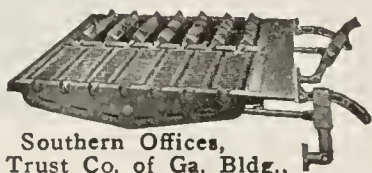
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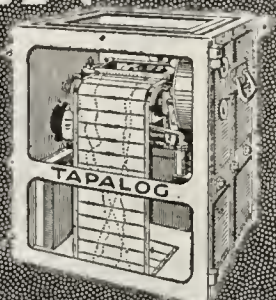
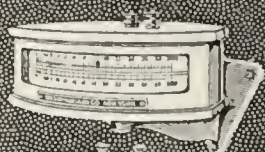
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a Waste, Improve Your Ware
or Lower Your Production Cost

Address all communications intended for this department to "Editor Questions and Answers," care of "Brick and Clay Record," Chicago.

Wants to Know How to Regulate Draft

997. Mississippi—We have a down-draft kiln for burning tile, description of it as follows: 26 ft. diameter, 30 in. tunnel, 30 in. smokestack 33 ft. high, 30 in. manhole. This kiln has 2½ in. flues, 8 in. apart. We have ten 20 in. fire opening. The draft seems to be too strong. Kindly put us in touch with some advice as to regulating draft.

There are two good methods to accomplish this result. One is by the introduction of a damper in the flue between the kiln and the stack. The customary method is to use a piece of sheet iron that slides in a prepared slot in the brick flue. If the flue is 30 in. wide, the slot is made 39 in., that is, 4½ in. on each side. In that case the width of the sheet iron damper is usually about 35 or 36 in. This width prevents the damper sliding out of the slot as it is moved up and down. The width of the slot longitudinally of the flue should be approximately 3 in. so that even if the sheet iron damper warps it will not bind. The height of the sheet iron damper should be practically the same as the distance from the bottom of the flue to the ground level. Some means of raising and lowering this damper must be provided, and the light chain block is often found very serviceable.

Another type, but one very seldom used, is very efficient and is easy to operate, except in cases where much flashing is done. This is the wicket damper. It is merely an opening near the base of the stack. When the kiln has full draft this opening is closed with brick, mudded over. As it becomes necessary to cut the draft the brick are removed from the wicket one at a time. The rush of air into the stack thru the opening thus made, cuts the draft in the kiln as effectually as tho a sheet had been shoved into the flue. If more draft is required after once cutting, the brick are put back in the wicket.

With either system of checking the draft, it is advisable to purchase a draft gage. With this instrument you can make a record of the draft at different stages of each burn so that when you obtain the correct condition you can easily duplicate that in future burns.

You can purchase one of these instruments from almost any of the equipment companies for a few dollars.

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How to Get Rid of Limestone Pebbles

998. Michigan—We have a new \$500,000 soft mud plant here, using Wellington machinery, and are making good brick and have No. 1 burns but we are troubled very much with limestone in the clay. When the brick are burned and exposed to the weather the lime pops and bursts the brick. Now if you know of anything that will eliminate the trouble, or something that will kill the lime, please give me all the information you can.

We sent this party a copy of an article which appeared in our magazine March 9, 1920, which no doubt will assist in overcoming the trouble.

and ANSWERS

Best Authorities in Every Clay working Branch Are Called Into Consultation—Their Advice is Free to You, Thru These Columns

Should a reply be desired by letter, send a stamped and addressed envelope with your question, and it will be answered promptly.

The following also appeared in our magazine on November 30, 1920:

"The unfortunate clay products manufacturer whose raw material contains limestone particles and pebbles, has one of the most difficult problems to combat and a difficulty that is both costly and hard to overcome.

"Limestone pebbles are especially troublesome in two ways; they are hard to get out and small particles that remain in the clay cause defects in the ware when it is burned.

"When the limestone particles which are in the clay are subjected to the high heat in the kiln they change to quick lime. Then when the brick are taken out of the kiln the quick lime particles absorb moisture and cause them to slake and increase in volume. The force which is exerted by the particle when it increases in volume is enormous and this phenomenon causes the ware to split or crack.

"The solution of these difficulties is first to get the stones out before molding the ware. This is done by the use of conical rolls which, altho they are of great help, do not take out every single piece.

"If the ware containing the limestone particles is ground finely, danger due to cracking is considerably reduced. If the clay is ground to twenty mesh or finer, a great improvement can be made in clay ware that usually gives difficulty in cracking due to limestone particles."

You will note the remark that limestone particles change to quick lime in the heat of the kiln, and that they slake when exposed to moisture. If your clay could be burned to a high enough degree of heat to fuse the lime you could overcome this difficulty in this way. However, very few building brick clays will stand a high enough heat to do this.

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The LETTER BOX

A Place Wherein Letters That Have General Interest Are Published and Commented Upon

Seeks Information About Recent Article

The following letter was received from J. B. Bain of Washington, D. C., regarding an article which was published in our pages recently:

"In the article on page 1076 of the issue of June 28, 1921, I do not understand how the author finds the average efficiency of the press crew to be 91.3 per cent. It seems to me that it should be 82.2 (or .3) per cent.

"I arrive at my result in this manner: The standard number of men was 13, the actual number used was 15, therefore the efficiency of the supply was 86.6 per cent. This percentage, multiplied by the efficiency of the press crew, or 96.1 per cent., equals 83.2 per cent.

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Will keep your pit free from water. Pumps continuously without attention or adjusting. Handles any fluid up to 40% solid when agitated and is particularly suited to Clay Plant needs.

NEEDS NO LUBRICATION!
Ask us for proof of performance

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Executive Offices, 224 W. 42nd St., New York, N. Y.
Distributors in all principal cities



Mortar Colors

Home builders demand a beautiful color with their brick. Ricketson's colors give brick charm, freshness and warmth in appearance.

Red, Brown, Buff, Chocolate and Blacks—other tints made by combining.

40 years proves their permanency.
For Brick, Mortar, Cement, etc.

RICKETSON MINERAL PAINT WORKS
Milwaukee, Wisconsin



THE Gruendler Hercules Crusher

Gruendler Hercules Crushers and Pulverizers are reducing production costs in thousands of various industries throughout the world.

"America's Famous Crusher"

Gruendler Crushers and Pulverizers are built simple in design and rugged in construction, all parts easily accessible—built in eight different sizes. Write us for interesting bulletin.

Gruendler Patent Crusher & Pulverizer Co.
924 N. Main St. ST. LOUIS, MO.

They Do Produce Results

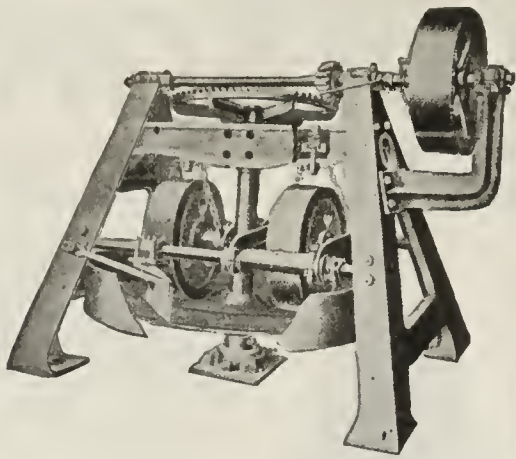
We refer to

Those little ads you have noticed in our Classified Ad Pages.

It is the decision of concerns who have used them. Try one.

Brick and Clay Record

THE EAGLE DRY PAN



Write for Prices

EAGLE IRON WORKS DES MOINES IOWA

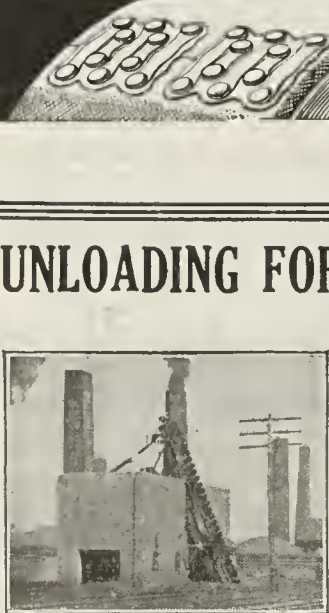
CRESCENT BELT FASTENERS

"Make Good Belts Give Better Service"

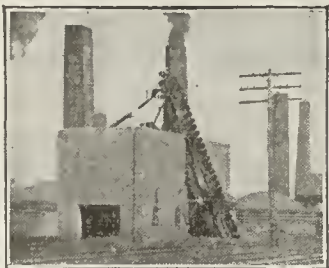
Once on, Crescents are on to stay. A Crescent joint will outlast the most durable belt. No part of belting is punched out or weakened. Maximum strength maintained. Belt runs same as endless on pulley side. No knocking or thumping. Noiseless. Joint hugs pulley. Full power transmission insured.

Write for new Booklet W on Increasing Belting Efficiency.

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UNLOADING FOR 3 CENTS PER TON



Elevating and conveying equipment. Steel and malleable buckets furnished in all sizes and shapes. Chain, sprockets, etc.

Let us quote you on your requirements.
The Columbus Conveyor Co., Columbus, O.

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THE LARGEST
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DEVOTED TO
CAR BUILDING
ALONE
CARS
FOR
EVERY MINING
AND
INDUSTRIAL
PURPOSE
CATALOGS ON
REQUEST
THE
WATT MINING
CAR WHEEL
CO.
BARNESVILLE OHIO

"Approximately the same result is obtained in this way: If the standard calls for 702 pipes to be made per hour by a gang consisting of 13 men, then the standard output per man is 54 pipes. The actual consisted of 675 pipes being put out by a gang of 15 men, or 45 pipes per man per hour. Then 45 divided by 54 gives 73.3 per cent., which is within .1 per cent. of the figure obtained by the other method.

"I would also like to know the method the author uses for determining the points for plotting the curves in Chart 2. I would like to know the individual steps taken, so I could plot a similar curve."

Mr. W. F. Godejohn of St. Louis, Mo., who wrote the article in question, has replied to the inquirer as follows:

"The writer does not desire to take issue with the gentleman who has inquired regarding the method of arriving at the press crew efficiency, as described in the article on 'Payment of Bonus to Pipe Press Crews,' since any number of methods are being used successfully. The method used in arriving at the figures given in the article is as follows:

Standard number of 6-inch pipe to be made per hour equals 702.

Actual number of 6-inch pipe made per hour equals 675.

Efficiency equals (675 divided by 702), or 96.6 per cent.

Standard number of men required equals 13.

Actual number of men required equals 15.

Efficiency equals (13 divided by 15) 86.6 per cent.

"By adding these two efficiencies, 96.6 per cent. (output efficiency) and 86.6 per cent. (labor efficiency) and dividing the sum (183.2) by two, we have 91.3 per cent. for an average efficiency.

"We can see no logical reason for multiplying the output efficiency by the labor efficiency, since they are both efficiency ratings by themselves, and to determine an average, as to determine any other average, they must be added together and the sum divided by two.

"Regarding the question pertaining to the location of the points on Chart 2, would say that most any method can be used. In locating the points on Chart 2, we were of the opinion that when a crew operated at less than 67 per cent. efficiency they were not entitled to any bonus, and for that reason used 67 per cent. as our low point. In order to keep up the interest of the men during the period when the plan was first being started, we concluded that a little more effort on the part of the men, at this particular time, should reward them in a little more than direct proportion. Thus, the curvature from 67 per cent. to 90 per cent. efficiency. The balance of the chart is in direct proportion, one per cent. bonus for each percentage of increase in efficiency. The exact points can be located on the chart shown on page 1077 of the June 28 issue."

IN *the* WAKE of *the* NEWS

Being Brief Mention of a Host
of Interesting Happenings in the
Varied Fields of Clayworking

Aged Clay Man Dies

Rozel Jacobs, for many years a member of the Suffolk (Va.) Clay Co., died at his home at Suffolk after some months of illness. Mr. Jacobs was well known in the industry, and in the 75 years of his life made many friends who will mourn his death.

Calhoun Resigns As Manager of Continental

Announcement is made that John A. Calhoun has resigned as general manager of the Continental Clay Co., and that J. H. Burns has resigned as treasurer of the same company. Both men will devote their entire time to the Calhoun Finance Co., recently organized to erect a ten story

building on the northeast corner of Cleveland avenue and Third Street, in the same city, Canton, Ohio.

J. E. Morrisey, manager of the brick and terra cotta department of the Cleveland Builders' Supply & Brick Co., has severed his connections with that concern to become general manager of the Canton division of the Continental Clay Co. Mr. Morrisey has been with the Cleveland concern for more than 12 years.

R. C. Penfield Visits Pacific Coast

R. C. Penfield, president of the Hadfield-Penfield Steel Co., well known manufacturers of clay-working machinery of Bucyrus, Ohio, returned east after a trip to the Pacific coast.

Takes Position With Panhandle Brick & Tile

C. C. Frampton has accepted a position with the Panhandle Brick & Tile Co., of Amarillo, Texas. Mr. Frampton was formerly connected with the Brinkley Brick & Tile Co., of Coleman, Texas.

Returns from Vacation Spent Abroad

C. P. Mertens, Chicago, western manager of the American Equipment Co. and the Hadfield-Penfield Steel Co., just returned from a two months' vacation trip to his old homestead in England. Mr. Mertens looks much refreshed and reports that he is in excellent health.

Changes Position

L. M. Johnson of the Alliance Brick Co. which has two plants, at Warren and Corunna, Mich., has been transferred to the Corunna plant. It seems that the plant is having difficulties and Mr. Johnson is confident that he can operate the plant profitably.

Making Brick From Ocean Beach Sand

W. Stinson of Santa Barbara, Cal., has been making experiments in the manufacture of brick from Santa Barbara beach sand which has attracted the attention of brick makers in Southern California. Heretofore it was thought that the excessive amount of salt in beach sand rendered brick making impracticable, but Mr. Stinson has used certain acids to destroy the strength of the salt. The new brick is called "Chembric."

Gets Good Terra Cotta Orders

N. Clark & Sons of San Francisco, Cal., have just closed contracts for furnishing the terra cotta for the H. C. Capwell & Co.'s new four-story department store and office building in Oakland which is to be erected at Broadway and Fifteenth Streets. The investment is about \$200,000. N. Clark & Sons are also to furnish the terra cotta for the new Title Insurance & Guaranty Co. of Oakland, and the West Side high school in Salt Lake City, Utah.

Organizes "Fireproof Home Builders"

The increasing popularity and demand for fireproof homes in Southern California has given rise to a new company in Los Angeles that will specialize in this class of construction. The Fireproof Home Builders are now erecting a number of brick hollow wall homes and double bungalows and have established new offices in the Title Insurance building. An exhibit of the brick hollow wall has just been completed in the company's offices to show people just what the new method of construction is like. Milton H. Andrew, president of the company, has published a booklet on the "Ideal" construction which is used by more than 150 brick manufactur-

DES MOINES



\$8.40 per dozen—\$96.00 per gross

Why Take Chances?

You know that the sharp edges of brick, tile, concrete blocks and other building materials, are hard on the hands. Often they cause permanent injury. THEN WHY DO YOU TAKE CHANCES on standing the cost of an injury to your workmen's hands.

Des Moines Gloves and hand pads assure absolute permanent protection. Send for a trial dozen today. Try out a pair on the hands of one of your workmen. If after fair trial you are not satisfied, just return the remaining eleven pairs at our expense.—FAIR ENOUGH?



\$4.50 per dozen
\$50.00 per gross

Write Today

Des Moines Glove & Manufacturing Co.
DES MOINES, IOWA



Get the full capacity out of your dry pan and pug mill auger

—insure regular deliveries to your off-bearers—keep them busy—speed up the efficiency of your plant—have your clay properly tempered, thus improving the quality of your ware—save labor, time and money.

Do these things all at once by installing the Marion "Rust Special" Feeder and Mixer.

Write for catalog describing the full line of MARION Clay Plant Equipment. No obligation to buy, but money in your pocket, if you do.

Marion Machine Foundry & Supply Co.
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Electric Motors and Generators

for all requirements of the
Brick and Clay Industry



BURKE ELECTRIC CO.

MAIN OFFICE AND WORKS
ERIE PENNSYLVANIA

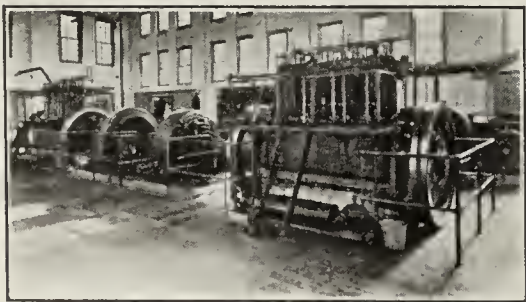
Service-Sales Offices

NEW YORK CLEVELAND PHILADELPHIA
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REEVES



Two 135-H. P. Units

GAS ENGINES

For Belt Drive or Direct
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If in need of power and located in natural gas
district, or if your power costs you over $1\frac{1}{4}c$
Per K. W. Hr., write

Hope Engineering & Supply Co.

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ers in the United States, Canada and Australia. Los Angeles may be said to be the home of the brick hollow wall type of building and this city was the first of large cities in this country to adopt a building ordinance favoring its use. Through the untiring efforts of the Common Brick Manufacturers' Association, the "Ideal" wall has been incorporated in the building codes of more than 20 large cities and nearly every brick company in America is recommending it. At present there are about 200 homes, apartments and garages in and around Los Angeles built of the hollow wall. Anaheim, Cal., has 56-room bungalow court containing 14 four-room apartments, all in one unit. In this building it is claimed the fire insurance saved on a three-year policy exceeded \$1,400, or \$40 per month.

California Tile Takes First Prize

D. A. Cannon of the Cannon Clay Products Co., Sacramento, Cal., spoke recently about the tile industry before the Progressive Business Club at its regular luncheon at Hotel Land. He told members of the club that tile made from silica from North Sacramento and combined with fire clay from mines in Amadore, Placer and Calaveras Counties, took first prize among 39 competitors recently at the Chicago convention. The talk was made interesting by a demonstration of a small machine which turned out sample tile.

San Francisco Prices Reduced

The brick manufacturers of San Francisco announced a reduction of \$5 per thousand on light burned face brick which went into effect October 1, while the California Brick Co. made a reduction of from 20 to 33⅓ per cent. on Dickey hollow building tile and Dickey partition tile during the latter part of September. Vertical fibre paving brick has also been reduced about five per cent., and according to N. A. Dickey, president of the California Brick Co., there has been a marked interest in the bay cities in hollow building tile and vertical fibre brick.

Long Beach Adopts Fire Wall Regulations

Strict observance of fire wall regulations will be insisted upon by the department of public service of Long Beach, Cal. The rules require that all exterior division and party walls of buildings of classes A, B and C shall project thru and be at least two feet above the adjoining roof line and shall be at least 12 inches thick. Such fire walls shall be continuous without openings and if of brick or stone, shall be laid in mortar containing not less than one part of cement to three parts of good lime mortar and the cement mortar must extend from the top of the wall to a point two feet below the roof joists. All this brick work must be laid as "full grouted" or "shoved" work. Other regulations called to the attention of architects, builders and contractors prohibit carrying walls during construction to a greater height than six feet above any other wall of the same structure.

Fire Damages Brick Plant

A big shed on the grounds of the Park Brick Yard at Hartford, Conn., was burned recently furnishing excitement for a large number of persons attending the Connecticut agricultural fair close by. The fire blazed up quickly and for a time gave indications of doing serious damage but it was soon checked by the firemen. The damage was not heavy and was covered by insurance.

Ray Tile Works Growing Rapidly

The Ray Tile Works at Rushville, Ill., which is controlled by a syndicate operating many plants, is the only one which will be operated thruout the winter. During the past year

large sums have been spent in refitting the plant, and much new and modern machinery has been installed. It is stated that the Ray Tile Works, due to its favorable location with coal and clay both near at hand, will soon be one of the largest plants in Schuyler County.

Most Artistic Building to Receive Prize

Artistic construction of dwellings was given an impetus by the Municipal Art League of Chicago recently. Its president, Everett L. Millard, announced a bronze tablet is to be awarded to the most artistic house, flat building, or hotel constructed in Chicago during the year. The Greenebaum Bros. Bank will give the tablet to foster architectural beauty in Chicago's buildings. The cost of the building will not enter into the competition, giving the man who builds a \$10,000 house the same chance as the builder of a \$1,000,000 apartment or hotel.

A movement is being started to promote small homes arranged on a practical basis to spare the housewife all the work possible. A small kitchen with everything arranged to save a maximum amount of steps, a large living room occupying half the ground floor, also used as the dining room, and windows to suit the requirements of the house, will be some of the things aimed at in what is termed a one "woman-power" home.

Clay Pot Company Starts Up

The Gill Clay Pot factory at Muncie, Ind., which has been idle for several months, has again started in full operation, employing approximately 200 men. It is said the company has orders that will enable it to operate for some time.

Running Three Plants at Capacity

The three plants of the Standard Brick Co., Evansville, Ind., are now running at capacity, and unfilled orders amounting to about 50 cars are on hand. According to John Andres, the brick business in Evansville is better now than it has been in years. At the beginning of September, the company's East Side plant, which had previously been idle for three or four years, began work. During the first six months of the year but one of the company's plants was running, and it was working at half capacity.

New Plant Has Wonderful Silica Deposit

Following its incorporation about a year ago the Clayton (Ia.) Brick & Tile Co., immediately began the construction of a plant which at this date is very nearly completed. The company has a silica deposit which is said to be 99 per cent. pure from which will be manufactured face and common brick, floor tiling of various colors, culverts and sewer pipe, bathroom fixtures and a variety of other products.

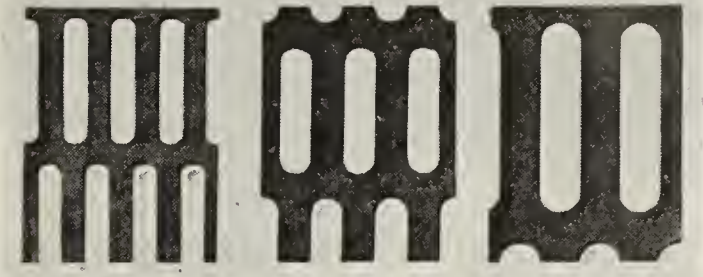
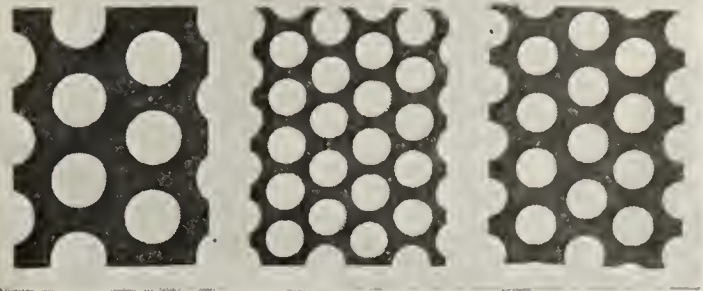
The products are to be manufactured, it is stated, by a patented process and the rights to certain foreign machines and formulas have been acquired. On its 40 acres the Clayton Brick & Tile Co. has almost inexhaustible deposits of silica and the height of the clay bank in the pit is 137 feet. The concern is fortunate in that the plant is on a lower level than the source of raw material and the gravity system of conveying can therefore be used.

The products are not to be confused with sand-lime brick as it is claimed they are harder and will not absorb as much water. It is hoped that the plant will be in operation before the advent of cold weather.

Independence Brick to Operate All Winter

Operation at the Independence (Kas.) Brick Co. has been resumed with a full force of men. Orders are coming in rapidly, it is said, and the company expects to run all winter.

Perforated Steel Screens



For Screening Clay, Shale, Sand, Gravel, Stone and Cement

All sizes and shapes of holes in metal of proper thicknesses to give the best screening results.

Sheets furnished flat or rolled to shape for revolving screens.

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NEW YORK OFFICE: 114 Liberty St.

You won't have to worry about competition if you treat your clay with

R. H. Precipitated Carbonate of Barytes

You can safely guarantee that your brick will be

Scum-Proof

You can get a higher price and influence architects to specify your product because Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's dependable.

We have a complete line of high grade chemicals for the clay industry

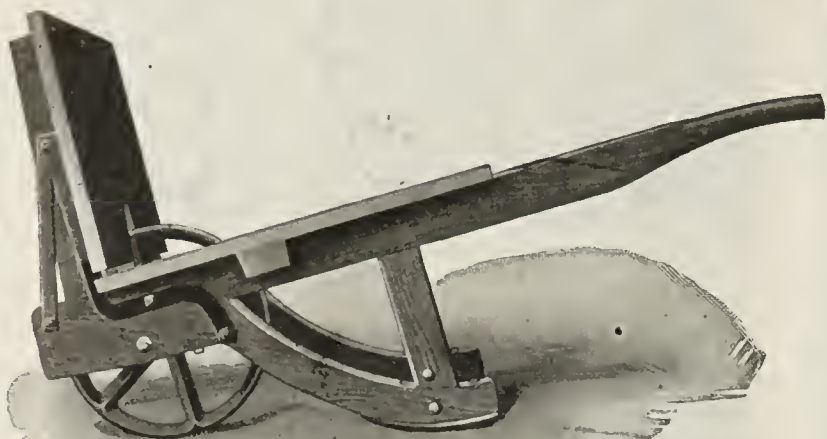
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Chicago, Ill. Cleveland, O. St. Louis, Mo.
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Boston, Mass. New Orleans, La.
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The Invincible Barrow



This favorite barrow has lost none of its popularity. We furnish them for either brick or sewer pipe and with plain wood, babbitted or spring bearings. They are honestly constructed thruout. On account of increased manufacturing facilities we are able to make immediate delivery.

Write for prices.

TORONTO FOUNDRY & MACHINE CO.,
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PEABODY COAL COMPANY

FOUNDED 1883

OPERATING 36 MINES
WITH ANNUAL CAPACITY
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18,000,000 TONS



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ST. LOUIS, MO.	MINNEAPOLIS, MINN.	SPOKANE, WASH.
KANSAS CITY, MO.		SHERIDAN, WYO.

"PEABODY FOR SERVICE"

Progress Pressed Brick Will Start Up

Oscar Hillenbrand, of the Progress Pressed Brick Co., Louisville, Ky., stated that the company planned to start running again about October 15, as stocks have been reduced to about 450,000 brick and orders on hand will take about 300,000. Lately there has been a better demand for plain face brick, which is expected to regain its popularity.

Plans to Enlarge Plant

J. D. Bobbitt, of the Madisonville (Ky.) Drain Tile Co., was in Louisville recently, and looked over some of the local plants, in order to secure some ideas for use in enlarging his own plant, which is outgrowing its capacity.

Fire Brick Works Doubles Output

There has been improvement shown in fire brick during the past ten days. J. H. Bell, sales manager of the Louisville (Ky.) Fire Brick Works, reports that business has increased and that after running two days a week at both plants, since last March, the company is now running four days a week, or is handling just double the business that it handled all summer. This demand is general and is coming from the oil refineries, steel and metal working trades, railroads, steamship, industrial and general sources. Mr. Bell stated that there had been a general improvement, and that it was very gratifying.

Face Brick Business Is Good

W. E. Whaley, Louisville, Ky., brick jobber, reported that his September business ran almost a quarter of a million face brick, practically all of which was on residences, with a little church and school work. To date October business is about 75 per cent. larger than that of last year, in spite of the fact that the season is getting late. Mr. Whaley said: "The rental situation has been getting worse instead of better, and as a result home building is active, and may continue that way if the weather is open. At any rate we will get a good early spring run. A number of the brick manufacturers who cut prices on surplus stocks last spring, have been advancing prices a little this fall, and this is making for more confidence in the minds of the consumers."

To Write Specifications for Tile Loading

A. P. McDonald, of the P. Bannon Pipe Co., Louisville, Ky., had expected to go to Atlanta on October 10, for an Interstate Commerce Commission hearing, which has been postponed to October 24. This hearing relates to hollow tile loading, to establish specifications for loading and reduce the breakage that is encountered in transit. Mr. McDonald also expects to attend the monthly meeting on October 18, of the Clay Producers' Association, at Chicago.

The P. Bannon Pipe Co. reports good business on sewer pipe, in connection with road work in the state, and city street work. Plumbing work has also been active, and taken the smaller sizes. A large quantity of road work was recently let and a lot more will be disposed of on October 27. The company is handling a fair volume of hollow tile work and shipping steadily on the Federal buildings at Dawson Springs.

Maine Plant Shuts Down

The Purinton Brick Co. of Waterville, Me., has closed its plant at Skowhegan, Me., for the season having manufactured half a million brick at the plant. Two hundred thousand of the brick were shipped to Winthrop, Me., for use in the construction of a new factory building for the Bailey

Oilcloth Co. Others were used in a building at Fairfield for the Keyes Fibre Co. The Purinton employes are now engaged in cutting wood for next year's operations. Several hundred cords will be cut and hauled to the yard before winter.

Baltimore Brick Co. Sells Property

The Baltimore (Md.) Brick Co. has disposed of property at Bouldin and McElderry Streets to the Columbia Building Co., which will use the site for a new building.

Clay Products Company Incorporates

The Patuxent Clay Products Co., 32 South Calvert Street, Baltimore, Md., has been organized under state laws with a capital of \$1,000,000, to manufacture clay products of various kinds, and to mine and deal in raw clays and affiliated materials. The company is headed by Henry N. Hanna, Arthur R. Kasson and Herbert W. Holmes.

Fire Brick Concern Organizes

The Seth Lee Fire Brick Co., of Boston, Mass., has been incorporated with an authorized capital of \$30,000. Seth Lee, manager of the Lee Fire Brick Co., of 201 Devonshire Street, Boston, Thomas W. Phelan, of Waban, and Martin J. Lee, of Boston, were the incorporators.

Boston Brick in Better Demand

Brick prices have eased up somewhat in the Boston market during the past fortnight. Altho nominally the quotation remains \$17 per thousand delivered on the job it is generally admitted that this is not a positive figure. An increase in municipal building has resulted in a somewhat better demand for brick and altho there are not many very large orders in sight brick manufacturers and dealers are described as more encouraged.

Building Bungalows for Shoe Company

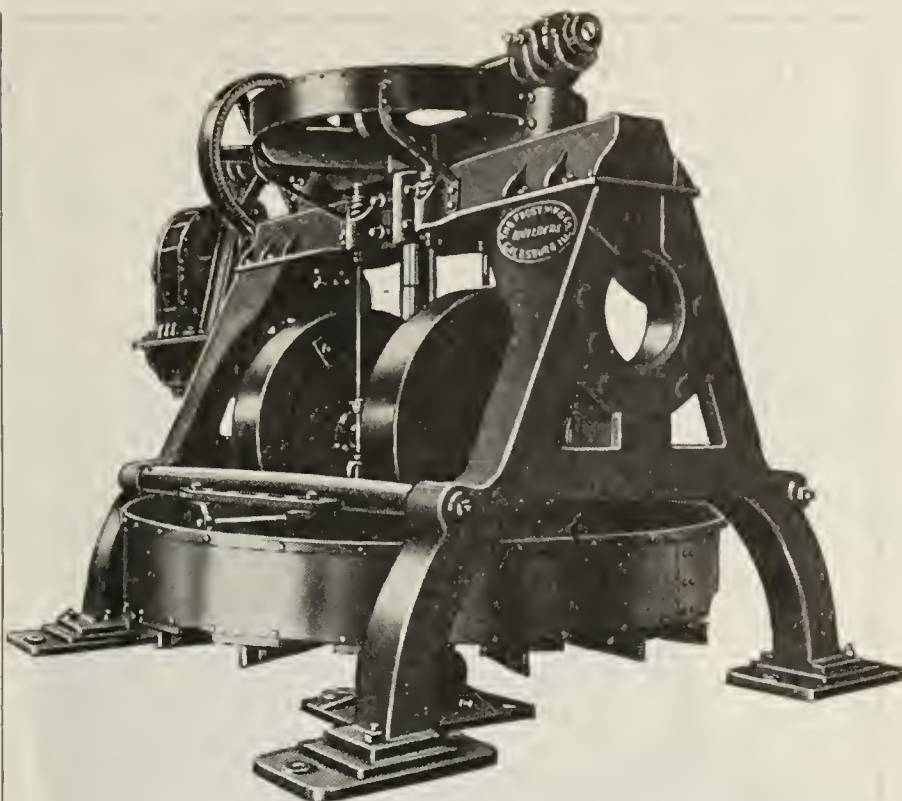
The Booneville (Mo.) Brick Co. has taken a determined step toward assisting in alleviating the house shortage in Booneville and aiding in putting up homes for employes of the Booneville Shoe Factory, which is to open soon, by contracting to erect three brick bungalows of moderate size. The company has purchased the necessary lots from the Booneville Development Co. and has taken options on six more. The erection of the bungalows will begin at once and they will contain five rooms with all conveniences. If the weather permits the company will build more than three bungalows this fall and in the spring will build a large number of similar dwellings, as it owns 20 lots near the shoe factory. Louis and Walter E. Gantner, owners of the brick company, declare that the need for homes next spring will be more urgent than ever, as the shoe factory expects to be operating in full blast by January 1 and there are not enough homes now for the executives and workers who are coming here from St. Louis to put the plant in operation.

Will Equip Plant for Spring Operations

Four officials of the Nebraska Clay Products Co., owners of the brick plants at Auburn and Humboldt, Neb., were in Humboldt recently visiting the plant and conferring with the foreman regarding the future of the works. It is stated that the company intends to re-equip the plant for an early opening in the spring of 1922.

Circulate Petition for Brick Pavements

Citizens of Nebraska City, Nebr., are firm in their belief that brick paving is to be desired in favor of cheaper kinds. In two districts of the city, including more than



DO YOU KNOW?

That Frost Pans aim to give you the best quality of material, workmanship and fabrication that can be obtained.

SEND US YOUR INQUIRIES
THE FROST MFG. CO.
GALESBURG, ILLINOIS.
ESTABLISHED 1851

"1922 Will Reward Those Who Lower Their Production Costs"

Every Clay Manufacturer should have a copy of "Clay Plant Construction and Operation," in his library. It is a timely text book containing a wealth of practical information on Labor Saving equipment, efficiency methods, etc.

The price of this handsomely bound volume is \$4.00 prepaid.

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Brick and Clay Record

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Chicago

WHAT METHOD DO YOU USE?

This question when applied to the manufacture of Stiff Mud Ware deserves consideration.

The Modern Way is the Right Way

THE ROLLER PRESS for all clays, shales, fire clays, surface clays, short bonding clays and laminating shales and clays.

Brick, Hollow Ware, Roofing Tile, Floor Tile and Drain Tile can be made on the ROLLER PRESS.

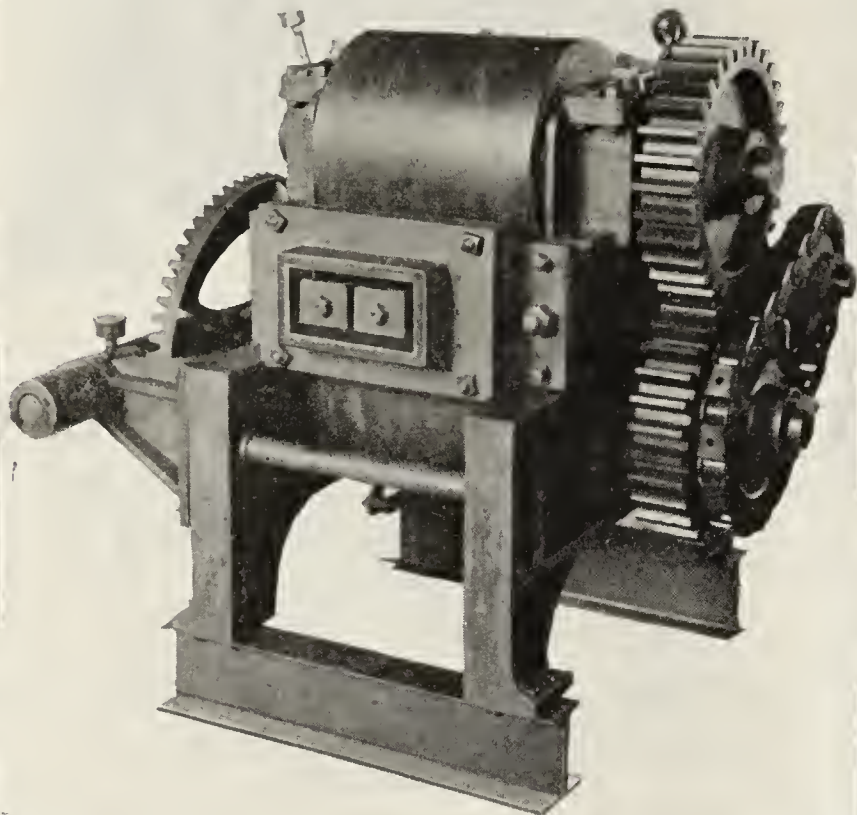
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Everything for the Clayworker.



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BRICK BARROWS

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Bulletins
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forty blocks, property owners circulated a petition asking that brick pavement be used in favor of concrete or asphaltic concrete. Contract for paving of these forty blocks has been let, as the result of the petition, for vitrified brick.

Duffney Brick Co. Suffers Fire Loss

Fire, believed to have been caused by an overheated oven in the dryer, caused damage to the extent of \$25,000 in the plant of the Duffney Brick Co., Mechanicville, N. Y., it is reported. The destruction was confined to two sheds filled with brick, the boiler and engine rooms and a barn. The greatest damage was done in the two sheds.

Duro Brick to Rebuild Plant

The Duro Brick Mfg. Co., Cuyahoga Falls, Ohio, has plans under way for the rebuilding of the portion of its plant, recently destroyed by fire with loss of about \$75,000, including equipment.

To Open Paving Brick Bids

The Ohio Highway Commission will open bids October 25 on a number of brick paving jobs. In the list are three stretches in Huron County and one in Jefferson County. The state is to furnish the brick on the three jobs in Huron County.

Columbus Prices Maintained

Prices of both face and common brick are holding firm in Columbus and central Ohio territory. Reductions which have been going on for some time have stopped for the time being. Face brick sell from \$24 to \$35 f. o. b. cars Columbus. Common brick are quoted around \$15 delivered on the job.

Drain Tile Rate Case to Be Heard

The protest of the Ohio Drain Tile Association against the freight rates charged on their product in Ohio will be heard before the Ohio Utilities Commission October 24. The case is being looked after by Judge Waltermire, a well known attorney and formerly a member of the Ohio Tax Commission.

Stocks Going Down

The Columbus (Ohio) Fire & Face Brick Co. reports business slow, but orders are coming in at times. There are quite a few good prospects however. The plant represented by this concern, the Webster Brick Co., at South Webster, Ohio, is not in operation, but reserve stocks are low and if orders are booked soon it will mean the resumption of operations at the plant.

Franklin Brick Shuts Down for Repairs

The plant of the Franklin Brick & Tile Co., east of Columbus, Ohio, which has been manufacturing hollow building tile was closed down temporarily recently for repairs. It is expected to resume operation within a few weeks. The other plant, making both face and common brick is in full operation. Mr. Dingledine, manager of the company, reports the outlook for brick, and in fact all clay products, as better.

Stark Brick Making Improvements

E. A. Stewart, president of the Stark Brick Co., of Canton, Ohio, is making a large number of improvements at the plant. The first was the building of two additional kilns and six tunnels. Following this improvement was the installation of a waste steam system which was followed by the building of two more kilns. The plant is now in first class condition and Mr. Stewart says the present year has been the best he has ever had.

Paving Brick Men Expect Good Year

Manufacturers of pavers in Ohio are closing up their season and are doing considerable shipping to fill paving contracts going on in many parts of the state. The season on the whole has been a fair one as far as manufacturing of paving brick is concerned. Prospects for the coming year are bright in most respects as municipalities and other political subdivisions will have considerable money to spend for street improvement.

Sewer Pipe Plants Are Busy

Inside of a month every sewer pipe and tile works in the Dover-Strasburg district will be working, it is predicted. Only two plants are entirely idle, one at New Philadelphia, Ohio, and another at Zoar. One department of another plant is idle, and one of the idle plants is undergoing extensive repairs. Few plants in the Uhrichsville district are idle. The demand for sewer pipe is increasing, manufacturers report. More inquiries are being received for future business along with additional orders.

Paving Brick Rates in Ohio Reduced

Freight rates on paving brick, sand, gravel and crushed stone, are to be reduced approximately 28.5 per cent in the state of Ohio, the public utilities commission has ruled. Reductions are to be effective October 20, and besides the percentage decrease ordered, paving brick rates will be reduced ten cents per ton. The order of the commission directs that the Ohio carriers restore the rates on the articles mentioned to those in effect prior to August 25, 1920. It will be remembered that at that time the Interstate Commission ordered a straight 40 per cent. increase.

Continental Clay to Build Sewer Pipe Plant

The Continental Clay Co., which has headquarters at Canton and a branch office in Columbus, Ohio, announces the appointment of James E. Morrissey, who was in charge of clay products department of the Cleveland Builders' Supply Co., for eleven years, as manager in charge of sales in the Canton division. He will make Canton his headquarters. The company has had plans drawn for a \$500,000 sewer pipe plant to be erected on the Ake Farm, in East Canton. The farm consists of 150 acres and has been purchased. Building operations may be started some time this fall or by spring at the latest.

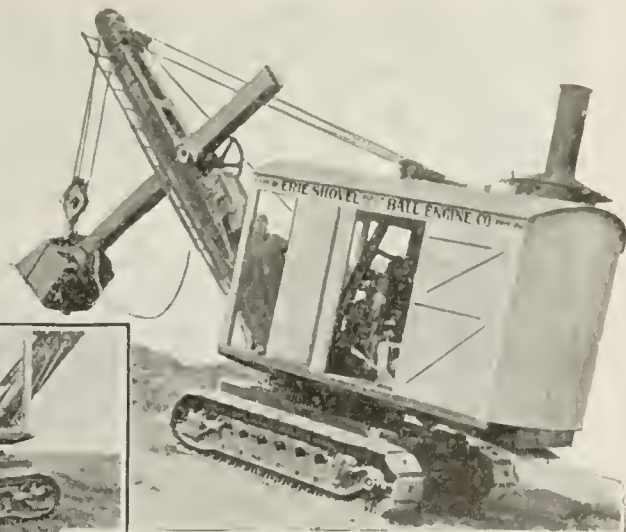
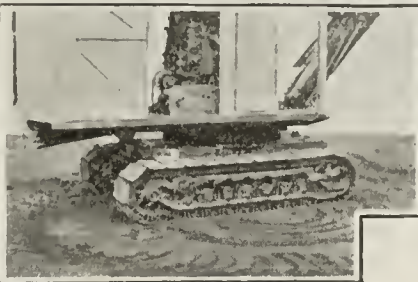
Columbus Needs \$42,000,000 for Building

Work could be provided for 33,524 men in Columbus, Ohio, according to estimates made thru the state department of commerce by John W. Prugh, state superintendent of building and loan associations, if construction of all of the homes needed in the Buckeye capital were to start at once. According to the United States department of commerce, following a survey of housing conditions in Franklin County a total of 8,381 homes are needed if everyone is to be properly housed. The survey was made following the suggestion from President Harding that aid be given to relieve the unemployment situation.

Since the government has found the building and loan associations the chief agencies in financing home building, the brunt of financing Ohio's building campaign will devolve upon these institutions. According to Mr. Prugh it will require approximately \$41,905,000 to finance all construction work in Columbus for home building and improvements on existing structures. Prugh declared that the building and loan associations were anxious to aid in the relief of the unemployment situation, but that it was necessary for the public first to put its savings into these institutions, which will aid in home construction.

CLIMBS GRADES as steep as 30% (engineer's measurement).

PERFECT POWER STEERING from the cab. Operator can make either sharp or gradual turns, or pivot right around in one spot (as shown below), without the assistance of a man on the ground.



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To make your move-ups easier and quicker, of course. You save the time needed to plank the shovel when traveling over rough or muddy soil. But you want a caterpillar type mounting that gives steady service, month after month. The ERIE caterpillar type mounting is reliable and durable, because it is FULLY LUBRICATED. And it has many other advantages over other continuous tread mountings you have seen.

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WOODSTOCK, VA.

Miner
and
Grinders

**Especially Prepared
for Brick Making**

Sales Office: CHARLESTON, W. VA.

Clay Men Buying Considerable Machinery

A large manufacturer of clay working machinery in the Canton, Ohio, district reports there are considerable inquiries along this line, which is an indication that clay working plants are making preparations for a big year in 1922.

"Demand for clay making machinery at this time compared to a year ago is about 35 per cent. of normal," one of the officials says.

There are many inquiries for new machinery to replace that of obsolete types and worn out machinery. Much new machinery also is being made for plants not only in the Canton district but everywhere, the majority of which are expanding and enlarging their factories.

The company is contemplating placing some new style machinery on the market soon, of interest to the clay products manufacturers, it is said, but at this time was not ready to divulge its nature.

Ohio Paves 769 Miles in 1921

L. C. Herrick, director of highways and public works, in a recent statement covering road improvement completed in Ohio up to October 1 shows a total of more than 40 jobs finished this year and 180 jobs finished in the month of September. A total of 769 miles have been completed during the nine months of the present year, all of which was done in first-class condition. But three jobs were rejected on the grounds of improper work. In all between 500 and 600 miles of the work completed was awarded last year. A total of 348 miles of improvement has been awarded by the department as it is constituted at present.

The reduction ordered in freight rates on all road-building materials and the impending drop in the price of materials will stimulate highway construction to a large degree according to Mr. Herrick. The program for next summer is far more extensive than that carried out during the present year.

Director Herrick expressed regret that there was delay in paying some of the contractors for the work done, but this was due to delay in getting the federal funds for a portion of the work.

Belden Brick Making Plant Improvements

Demand for building brick continues to be good in the Canton, Ohio, district. P. B. Belden, district secretary and general manager of the Belden Brick Co., declared recently: "The industry locally shows signs of a permanent revival, and prices are becoming stabilized, being approximately the cost of production."

"All seven of our plants are operating," said Mr. Belden. This alone is a good indication that conditions are improving. Orders are more plentiful, and inquiries are more frequent than in former months."

Extensive improvements are being made to the plants of the Belden company in Canton, Port Washington and at Somerset, Ohio, according to Mr. Belden. The machinery in these plants is being modernized, and among other things waste heat dryers are being installed in each of the plants.

Mr. Belden predicts a drop in freight rates, which will directly affect the brick industry and will mean lower prices and an increase in business. He says, however, that this expected drop in freight rates will not come before early in 1922. Building activities are unchanged, there being a good volume of building in progress in the Canton district for this season of the year.

Four Metropolitan Plants Working Full Time

All four plants in the Canton, Ohio, district and the three in Youngstown of the Metropolitan Paving Brick Co. are operating at full capacity for the first time this year, an official of the company declared.

"In an effort to get out all orders promised for fall deliveries, all plants have been working full time, and from present indications the factories will continue to operate full time until November 1, at which time all orders now on file will have been shipped," he added.

There is not a great demand at the present time for paving brick, the official said, and no one seems to know just what the prospects for next spring are at this particular time.

Practically all plants in the Canton district and those in Tuscarawas County are working well up to capacity, and some companies report the volume of business on the increase.

No predictions as to operation after November are forthcoming at this writing.

Beaver Falls Plant Resumes Work

Employees of the Eastvale Brick Plant, Beaver Falls, Pa., returned to work the latter part of last month when operations were resumed. The plant had been idle for several weeks.

Clay Company Organized

The Hite Coal & Clay Co., Lilly, Pa., has been organized with a capital of \$50,000, to engage in clay mining operations in this section. M. Hite is treasurer of the company.

Brick Plant Destroyed by Fire

Fire totally destroyed the factory building of the Kushequa (Pa.) Brick Co., it is said. The fire started about 11 p. m., but was not discovered until it had made great headway, altho three men were at work all night at the kilns and dryers. No insurance was carried on the plant.

Starts After Year's Shut Down

Work has been begun at the plant of the Harrisburg (Pa.) Shale Brick Co., which had been closed down for over a year, production being maintained at the rate of 40,000 brick per day. Previous to its opening, various improvements were made. Four kilns were rebuilt and two new dry pans were installed. Trucks also have been reconstructed. Altho 20 men were put to work when operations began, it is hoped that this force can be increased.

To Increase Output

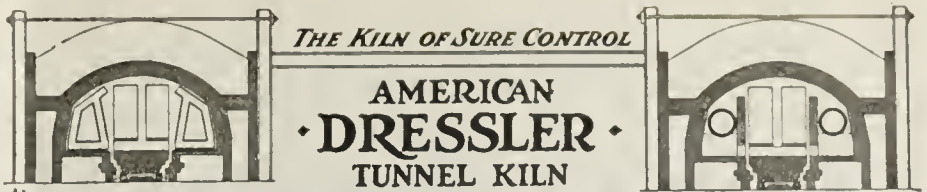
The Laurens (S. C.) Brick Co. is planning for the enlargement of its plant on the Little River. New equipment will be installed to increase the capacity from 30,000 to 45,000 brick.

Make Many Improvements

The Herbert-Fischer Brick Co., in New South Memphis, is manufacturing common mud brick and has completed extensive mechanical improvements at their plant and now has a large capacity there.

Clay Companies Exhibit at Tri-State Fair

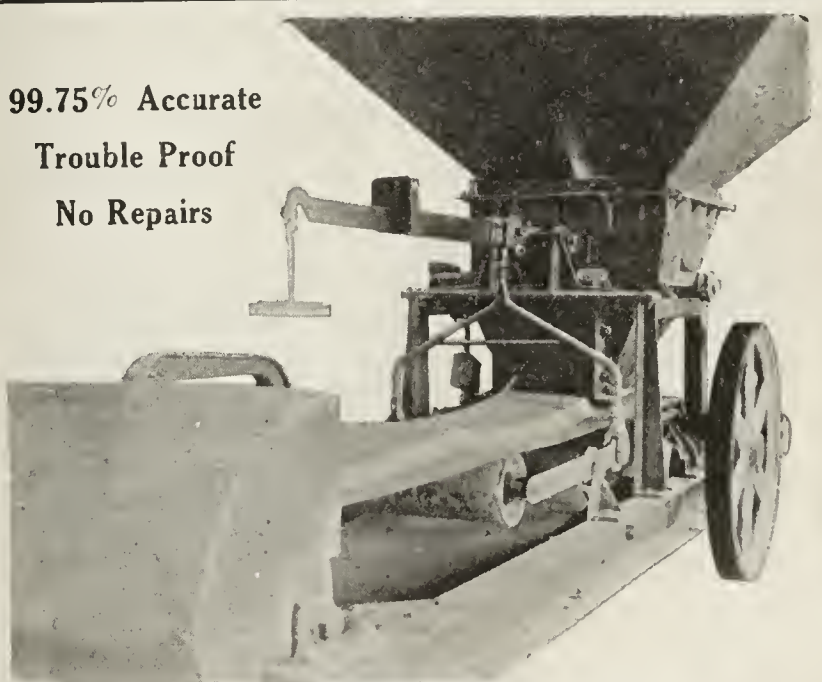
At the Tri-State Fair which closed at Memphis, Tenn., on October 1, several of the Memphis firms had interesting booths and exhibits. The Moss-Devoe Brick Co. had an attractive display on the mid-way. John A. Denie Sons Co., 82 South Front Street, had a booth showing fire brick, sewer pipe, tile, cement, plaster and terra cotta products. The Improved Brick Co., of Meridian, Miss., had a tall pyramid-like booth showing their face brick and Sanderson brick product. The Fischer Lime & Cement Co., of Memphis,



The sure control of Dressler Kilns makes possible greatest fuel economy.

American Dressler Tunnel Kilns, Inc.
1740 East 12th Street,
Cleveland, Ohio

99.75% Accurate
Trouble Proof
No Repairs



SERVICE AND RELIABILITY

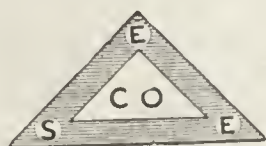
In the Tempering and Mixing of Your Clay

You are conscious from the beginning that the Poidometer is giving you unexcelled service, but it is not until after you have had years of this trouble free operation, that you come to appreciate in full the RELIABILITY of the Poidometer.

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This coal is superior for burning clay products. It enables the clay plant owner to burn his ware at a much lower cost. Our service is the best to be had and the price is right.

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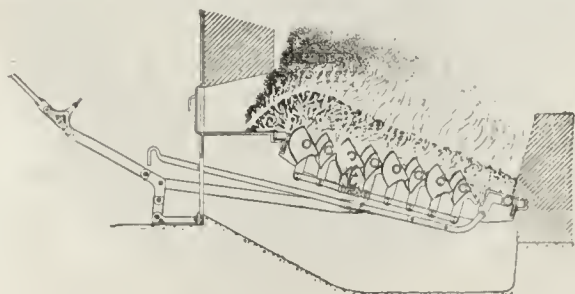
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Tile Plant Saves Coal and Gets More Capacity

NATIONAL TILE CO.
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We are operating two Cokal Hand Stokers under our boilers with entire satisfaction. We are saving 20% on fuel and are getting an increase of steam capacity. The engineer advises that our old system would not carry the full load we are now pulling.

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Harry Haugh, Sec.



Send for complete folder now.

COKAL HAND STOKERS

For Boilers or Kilns

COKAL STOKER CORPORATION
1037 NORTH CLARK STREET, CHICAGO

had a display showing fire brick, sewer pipe, tile, clay, face brick, cement and roofing products. This was in the Fine Arts Building.



A Booth Maintained by John A. Denie's Sons at the Occasion of the Tri-State Fair at Memphis, Tenn. Various Clay and Other Products Are Exhibited.

Builds Attractive Exhibit

The Fischer Lime & Cement Co., on Walnut Street, Memphis, has completed on the second floor of its new warehouse addition a very handsome exhibit of face brick, in mantel, wall and decorative effects, and tile floors. This room occupies almost half of the front side of the second story of the new warehouse.

Outlook in Memphis Excellent

The Memphis (Tenn.) Brick Supply Co., handling face and fancy brick and terra cotta products, of which J. J. Bishop is manager, reports good autumn activities in Memphis and excellent outlook for 1922. The good prices of cotton, the improvement of the hardwood market, feed industry, and the great demand for buildings, business and residential, warrant this prediction in the opinion of Mr. Bishop, who outlined to the *Brick and Clay Record's* correspondent several of the notable brick structures of the autumn.

Texas to Spend \$30,000,000 on Good Roads

Twenty-five hundred miles of improved highways are now under construction in Texas, according to R. M. Hubbard, chairman of the State Highway Commission. These improvements will involve the expenditure of \$30,000,000 of state and federal funds. At present over 200 projects are under construction and in the near future work will be begun on seventeen additional sections totaling 144 miles. Federal aid on the work now in progress has averaged about 35 per cent.

Increasing Capital Stock

The Watson-Fitzgerald Co., Danville, Va., manufacturer of brick, is planning for an increase in its capital to \$150,000 for proposed expansion.

Gets \$60,000 Sewer Pipe Order

One of the largest sewer pipe orders that has ever been placed in the West was given to the Big Horn Basin Clay Products Co., Lovell, Wyo., recently, it has been announced. The contract calls for the furnishing of the sewer pipe to be used in the new sanitary sewer which the city of Cheyenne is now installing. The tile to be supplied will amount to approximately \$60,000. Working on single shift the order is expected to keep the plant busy for more than five months. Ten to 24 inches are the sizes of the pipe.

Elect P. A. Galarneau Chairman

P. A. Galarneau, manager of the Citadel Brick & Paving Block Co., Ltd., Quebec, has been elected chairman of the Quebec city branch of the Canadian Manufacturers' Association for 1921-1922.

Returns from European Trip

Col. W. C. Trotter, president and general manager of the Standard Clay Products, Ltd., St. Johns, Quebec, and New Glasgow, N. S., has returned home to St. Johns after a three months' holiday in Europe.

Changes Corporation Name

Cooksville Shale Brick Co., of Canada, Ltd., is the new name of the Shale Brick Co., of Canada, Ltd. For years the product of this company, whose plant is at Cooksville, Ont., has been commonly known as "Cooksville Brick," and it has been found advisable to identify the name of the company with that of the product. The head office is in the Crown Life Building, Toronto, Ont.

* * *

Petrified Products, Ltd., Vancouver, B. C., have changed their name to Pacific Brick & Tile Co., Ltd.

* * *

Employees of the Milton (Ont.) Pressed Brick Co., Ltd., have accepted a wage cut of five cents per hour.

* * *

Building Situation :

(Continued from page 580)

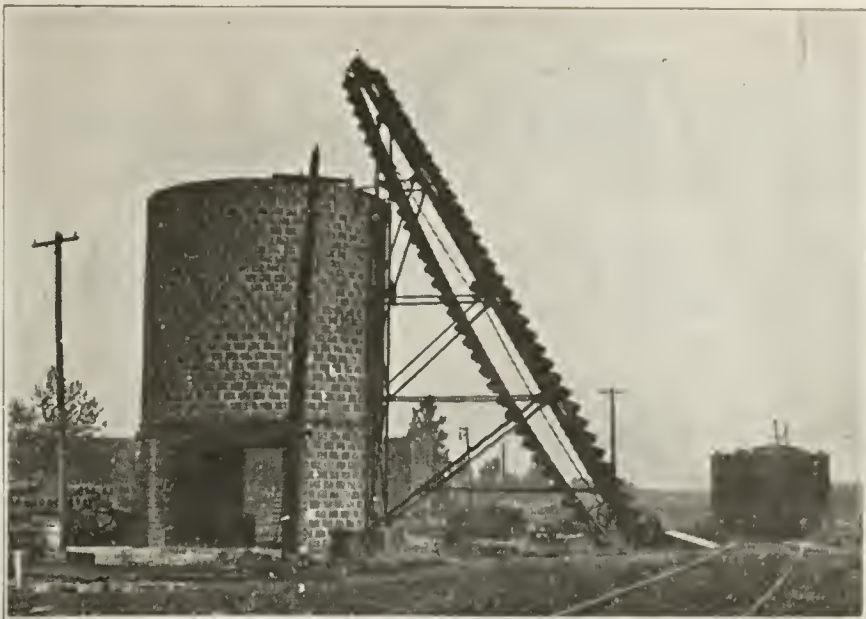
Tho the largest part of the small house construction going on in the city is going to competitive materials, brick is coming in for probably a greater share than ever before. There are numbers of large apartment buildings being constructed and these, of course, are almost invariably of brick. Chief among the latter is a 250 apartment building which is to cost in the neighborhood of \$2,000,000. Work on this building will probably soon be started.

One of the most interesting announcements made recently is that the Board of Education is now ready to begin the construction of \$6,000,000 of public schools. The present school facilities are inadequate and it is absolutely necessary that many new schools be erected.

THE LOUISVILLE OUTLOOK

Business in Louisville, Ky., is holding up well for the late fall, and the local jobbers and producers of brick and clay products are anticipating a very fair run of business until cold weather slows things down. Business during September was very active, and October business has been about double that of last October to date. Skilled labor has been scarce, but common labor has been in full supply. A number of new permits are coming out for residences and two to three apartment buildings. However, it is not believed that this work will carry thru the winter.

However, with rentals advancing instead of declining, and many apartment house owners having advanced rentals ten per cent. October 1, demand for homes is looking better. The fact that lumber and some other building materials are higher is resulting in greater confidence in prices of homes, and indications are that building will be a little more active in the spring, and will start earlier. Right now it is estimated that there are 5,000 unemployed in Louisville. This number may increase with cold weather, but on the other hand industries are a little busier, and absorbing more men, with the result that conditions as a whole are fairly satisfactory.



55 Tons of Lump Coal Unloaded In 50 Minutes

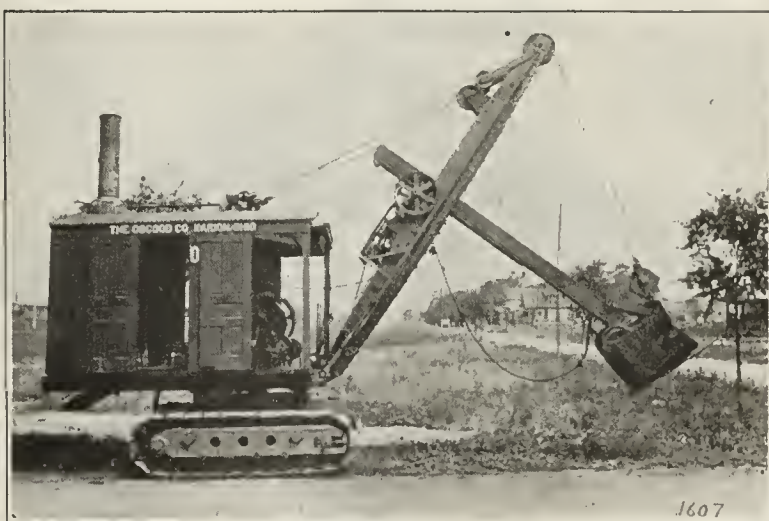
That is what a Sunbury Automatic Car Unloader does in filling a coal bin for the Krick-Tyndall Co., Manufacturers of Tile and Blocks, Decatur, Ind.

Think what it means to unload a car of coal, this day of car shortages and labor scarcity, in approximately one hour. It's real ECONOMY as well as co-operation in solving the great railroad difficulties.

The SUNBURY UNLOADERS are now used by hundreds of industrial concerns unloading coal, gravel, stone, sand, etc., paying for themselves in a short time in the saving of time and labor.

Tell us your requirements and we will send you complete information including prices and specifications.

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Demand the BEST
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Liberal Dimensions,
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Long Life.

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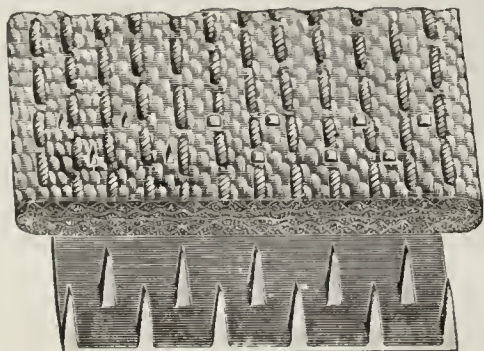
The OSGOOD Company, Marion, Ohio U. S. A.

OVER \$1000 SAVED

by using the

Talcott Clinching Belt Hooks

They
Reduce
the
Breakage
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Belts



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Make
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Last
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A Superior Fastener for All Kinds of Fabric Belting

Used for 30 YEARS in the leading Brick Works Cement Works, etc., on HEAVY DRIVES and CONVEYOR BELTS.

SEND FOR FREE SAMPLES AND TRY THEM

W. O. & M. W. Talcott, Inc.

PROVIDENCE, R. I.

TALCOTT STANDS FOR QUALITY

Buy "signed" valves—with the Jenkins Diamond Mark and signature on the body.



Figure 241
Globe



Figure 243
Angle

Quick Opening Valves

Globe and angle types, standard pattern suitable for working pressures of 150 pounds steam, or 250 pounds water. Valves open in about quarter the usual number of turns. Ordinarily fitted with lever handles but can be furnished with hand wheel if desired. Fitted with Jenkins Renewable Disc.

At supply houses everywhere.

JENKINS BROS.

New York Boston Philadelphia Chicago
Montreal Havana London

FACTORIES: Bridgeport, Conn.;
Elizabeth, N. J.; Montreal, Canada.

2338-J

Jenkins Valves
SINCE 1864

BUILDING AT MEMPHIS

Plans and specifications will be placed in the hands of contractors in October by Architect W. C. Lester, for the new building of the Buick Motor Co. Dave Derron is the builder and it will be leased for a term of years to the Buick company. The building will be two stories in height, 100x218 feet. The structure will be in part of reinforced concrete, the exterior of matt brick and pottery tile giving it a handsome appearance. It is planned to have the same completed by April 1, 1922.

Plans have been made at Memphis by Architects Harker and Cairns for what will be the tallest sky-scraper in that city. The building will be 21 stories, with basement and sub-basement. The exterior will be of white tile, the interior finished in Memphis gum, for upper and marble for lower floors. It will be three stories higher than any building in the city, with 4,400 square feet of space on each floor. Brinkley Snowden, Memphis capitalist, and associates will build the structure.

IN THE SOUTH

Thruout the South building is continuing at a fair pace tho in some sections things are comparatively quiet. It is doubtful just what the winter months will bring tho the outlook in most sections shows cause for optimism.

In Tulsa, Okla., building permits are increasing steadily and three important projects are well under way in the business district. One is a new school building; another a \$600,000 building for the Atlas Life Insurance Co.; the third is a \$300,000 building project. During 24 days of September building permits had a total of valuation of approximately \$250,000.

In Oklahoma City plans have been prepared for an eight story building, 100x50 feet, the first two stories to be 100x100 feet, the project to cost \$300,000. The Y. M. C. A. of Augusta, Ga., has let the contract for a \$220,000 structure to be brick and concrete.

LOS ANGELES THE IRREPRESSIBLE

The trend of business is distinctly upward in Los Angeles. Building is phenomenal. The tearing down of one unsightly scaffolding and fence is only the signal for the erection of another. The first unit of a half million dollar store that is gradually to replace the old edifice of the Fifth Street Store, will soon be started.

Nineteen more employes have been added to the city force to keep pace with the building activities.

A new freight depot to cost not less than \$250,000 is to be erected by the Salt Lake Railroad Co. at Alameda and Hunter Streets, construction upon which will begin within 60 days. The new station is to replace the old building at Aliso and Myers Streets, and will be modern and fireproof, of reinforced concrete. The plans call for general freight offices on Alameda Street, 80x200 feet, two stories and basement. The freight house, paralleling the team tracks, will be 50 feet wide by 600 feet long.

Hollywood is to have a new synagogue, but no details as to its price, location or style of construction is yet decided upon.

A decided improvement is being shown in the common brick industry and brick heaps are in evidence everywhere. Brick is the favored material by a considerable margin. A close second in favor is the hollow tile for wall construction and, with a tile roof this makes an ideal small house.

✻ ✻ ✻

Investigating Southern Minerals

An investigation of various deposits of clay, mica schist, slate, marble, talc and kaolin in Alabama, Georgia, Tennessee and North Carolina with regard to their suitability for use as mineral fillers is being undertaken by the Southern Experiment Station at Tuscaloosa, Ala.

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

Bristol Exhibit at the Chemical Show

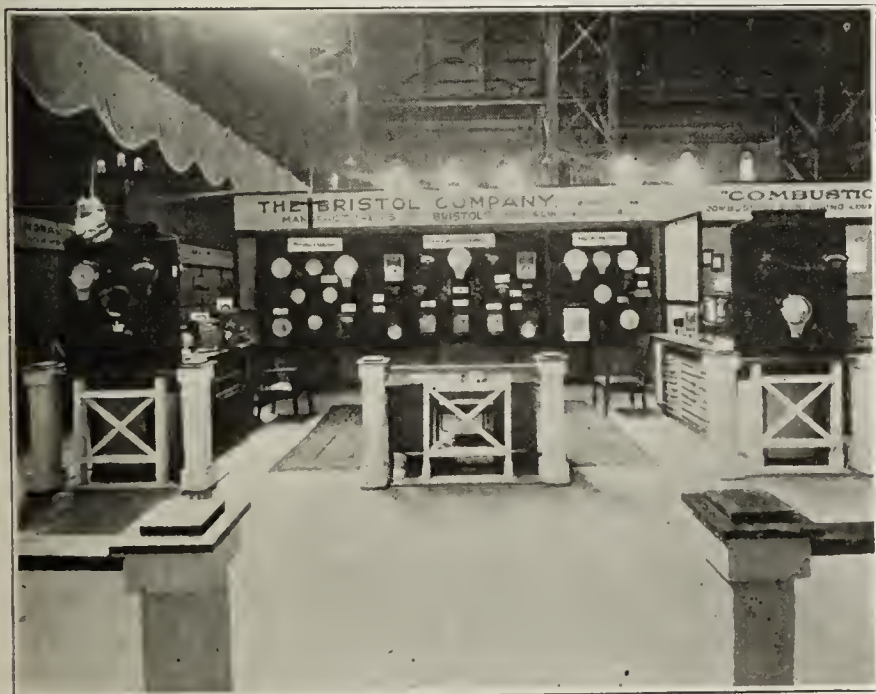
The illustration shows the booth of the Bristol Co. at the Chemical Show recently held in New York City. There the very complete line of Bristol's Recording and Controlling Instruments were shown to good advantage. Some of the instruments exhibited included recording pressure and vacuum gauges, liquid level gauges, thermometers, pyrometers, ammeters, wattmeters, time, speed and motion recorders, also recording psychrometer and the long distance electrical transmitting system for electrically transmitting records of pressure, temperature, motion, etc., over distances of even several miles.

Probably the instruments of greatest interest to men representing the brick, clay and pottery industries were the high temperature measuring instruments including indicating and recording electric pyrometers, also the temperature controlling apparatus.

The pyrometers operate on the thermo-electric principle, and are capable of indicating and recording temperatures up to 3,000° F. or centigrade equivalent. The instrument most often used in the brick kiln is the high resistance indicating pyrometer, located near the kiln to guide the operator in controlling temperature. In connection with this indicator it is a common practice to install in the superintendent's office a recording instrument which makes automatic records of temperature maintained in the kiln, which makes it possible for the superintendent to keep in constant touch with conditions in the kiln and also furnish valuable records to be filed for future reference. The recording instruments can be furnished in both the round chart and strip chart types. For the kiln work, however, the instrument known as the Double-Record, Double-Movement Strip Chart Type is usually preferred because it is possible with this kind of instrument to obtain an unbroken record of the complete burn. With the double record feature the one instrument does the work of two single-record pyrometers.

A very important feature of Bristol's Pyrometer is the automatic internal cold-end compensator. The automatic compensator is patented and is furnished exclusively with Bristol's Millivoltmeter Type Pyrometers. This compensator obviates the old necessity of maintaining a constant cold end. With the use of the automatic internal cold-end compensator the cold-end of the thermo-couple (or fire-end) is located in the instrument itself, where the very simple automatic compensating device is installed.

It is an established fact that the pyrometer will read correct-



Bristol Exhibit at the Chemical Show.

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FIRE BRICK—Various grades
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SAGGERS—Clays that will
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Sandy Clay.

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Clay.

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and Blue Sandy Clay.

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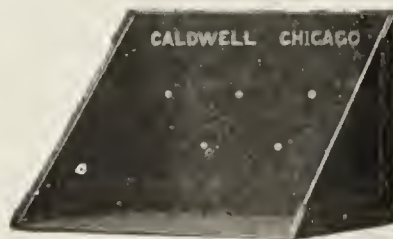
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Complete bucket elevators with
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malleable buckets,—chain, etc.



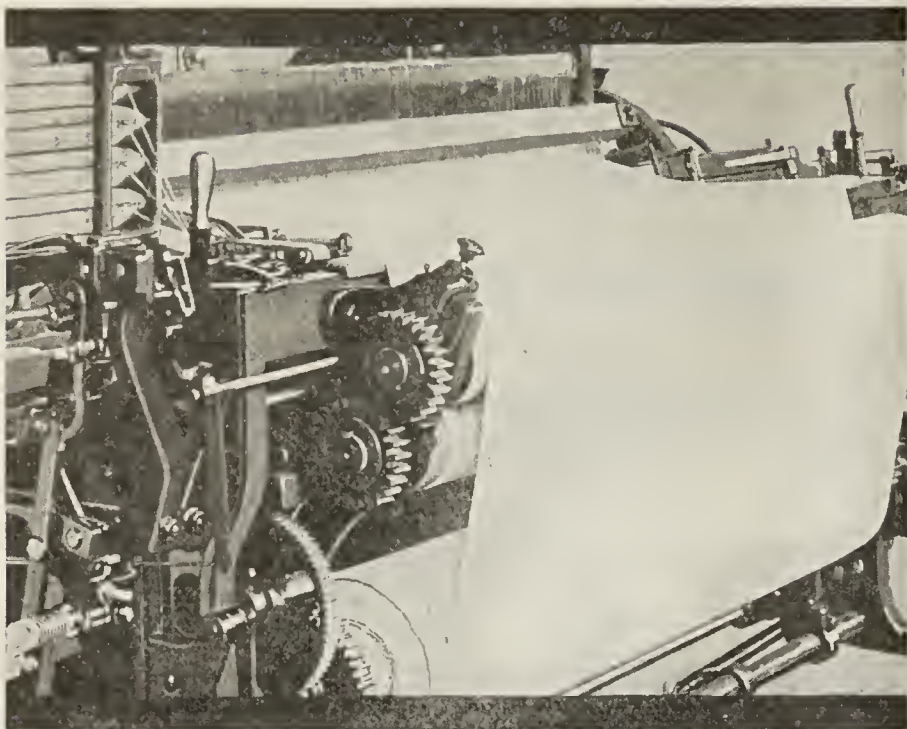
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BELT

ly if the zero of the instrument pointer is set to indicate the temperature of the cold-end. As the instrument is now the cold-end, it is simply necessary to set the zero to the temperature of the instrument, and the reading will be correct. That is just what Bristol's Automatic Internal Cold-End Compensator does; not occasionally, or once every hour, but continuously day and night. No allowances for corrections are necessary. There is no further expense other than the original cost: nothing in the compensator to get out of order: it is absolutely fool-proof.

With the use of pyrometer instruments, to guide the operator, it is possible to obtain better regulation, which results in a saving of fuel, time and material.

The automatic temperature controller exhibited at the Chemical Show operates on the same thermo-electric principle as the pyrometer already described and may be used in connection with temperature up to 3,000° F. for furnaces, etc., heated by means of gas, oil or electricity.

The thermo-couple of the apparatus is installed in the furnace, the temperature of which is to be controlled. The instrument can be set to any desired temperature. As the temperature at the fire-end increases or decreases it makes or breaks the electrical contact of the instrument, which in turn automatically operates control valves which regulate the quantity of heating mediums, and in this way automatically control the temperatures to a very close regulation. The same automatic compensator is furnished with the regulator apparatus as used with Bristol's Pyrometers, thus eliminating any cold-end errors.

The value of automatic temperature control can very well be realized. It does away with much of the human factor and possibility of forgetting, and provides a reliable means of constant control which results in a greater economy of fuel, and insures uniform products without the danger of spoiling material due to improper heat treatment.

Statement of the Ownership, Management, Circulation, Etc., Required by the Act of Congress of August 24, 1912

of "Brick and Clay Record" published Bi-Weekly at
Chicago, Ill., for October 1, 1921.
State of Illinois,
County of Cook.
SS.

Before me, a Notary Public in and for the State and County aforesaid, personally appeared Edwin G. Zorn, who, having been duly sworn according to law, deposes and says that he is the Editor of the "Brick and Clay Record" and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and address of the publisher, editor, managing editor, and business managers are:

Publisher: Industrial Publications, Inc.....Chicago, Ill.
Editor: Edwin G. Zorn.....Chicago, Ill.
Managing Editor: Frederick L. Steinhoff.....Chicago, Ill.
General Manager: H. H. Rosenberg.....Chicago, Ill.
Business Manager: David B. Gibson.....New York, N. Y.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent. or more of the total amount of stock.)

H. H. Rosenberg.....5349 Sheridan Rd., Chicago, Ill.
David B. Gibson.....15 W. 38th St., New York, N. Y.
Edwin G. Zorn.....7533 S. Sangamon St., Chicago, Ill.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent., or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state).....None.

4. That the two paragraphs next above giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

Edwin G. Zorn.

(Signature of editor, publisher, business manager, or owner.)
Sworn to and subscribed before me this 27th day of September, 1921.

F. K. True.

My commission expires Sept. 23, 1924.

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The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups," to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

URGE ASSOCIATIONS' ACTIVITY ON FREIGHT RATES

EVERYWHERE YOU GO,—prominent speakers in addressing their audiences, business men in their discussion of the industrial situation and people in their daily conversation,—reference is made to home building and construction as the tow rope that will pull the country out of the mire of industrial depression. In other words, everyone is waiting for the arrival on the scene of the conveyance that will bring this relief.

The factor that will bring this relief is a reduction in freight rates on building materials. The construction industry was the first and hardest to be hit by war exigencies and high freight rates. This fact and the point that a reduction in rates is necessary in order to stimulate the building industry, are two good legs to stand on for a demand for lower rates.

Associations representing the different industries comprising the construction field should appoint committees and redouble their efforts at this time to secure a suspension of the high freight rates on building materials which are impeding the progress of prosperity.

* * *

A THOUSAND SERVICES CHEERFULLY RENDERED

IN THIS ISSUE is published Question and Answer No. 1,000. This means a great deal. The department was instituted less than a decade ago, and its popularity has been considerable from its very inception. This is indicated by the number of inquiries that have been received and answered.

Altho the question and answer is numbered 1,000 in this issue, there have been a great many more inquiries received. Some of them, however, were of confidential nature and others of no general interest, and these of course were not published or given a number. Hence if all the inquiries of this nature were included the number undoubtedly would reach several thousands.

It is a credit to *Brick and Clay Record* to have earned the faith and con-

fidence of its subscribers so that they will refer to us the many confounding problems that they meet with daily. This is a recognition that we cannot help being mighty proud of. We have been asked to give advice on matters that really meant the salvation of a plant. One man stated that he was saved of a complete shut down by the advice given.

I am enclosing copies of the recommendations of the Conference in regard to construction, and in regard to the advisability of making repairs, renewals, and plant betterments at the same time. I think it is without question that the construction industry will sooner or later revive and that those manufacturers who have their plants in condition for low cost production will be in the strongest position pending and during revival. From the point of view of unemployment, the housing shortage and revival of the construction industry, I believe your work to reduce the costs of brick making is to be commended.
—John M. Grics, chief, Division of Building and Housing, Department of Commerce, Washington.

We have been told some of the vital, innermost secrets of some of the plants, but have always kept these problems in strict confidence. We have been told in many cases of having saved thousands of dollars for clay plants. This has been very gratifying to us.

In many cases one man's problem is also another man's problem, and undoubtedly many of these questions and answers have, besides giving interesting reading to subscribers, been of direct benefit to many of them. The department has given the reader some real, practical counsel on actual problems confronting him in his daily work, and the value of this service surely is inestimable.

To have earned this prestige, *Brick and Clay Record* has done all in its power to give the best service that it could render. Inquiries have been sub-

mitted to and studied by leading authorities in the clay industry. In the answers that have been given—altho it has not been revealed in every instance—there was contained the advice of such well known men as Bleininger, Lovejoy, Binns, Greaves-Walker, Moore, Keplinger, Rogers, Watts, Harrop, Stull and others.

While it is not always possible to give the correct diagnosis and cure of a problem by correspondence, remarkable results have been possible because of the Questions and Answers Department. Incidentally, this is a service that *Brick and Clay Record* gives which is not usually recognized in its subscription price and while it is not claimed that there can be found in this section a panacea for all ills, valuable information is certainly obtainable.

Brick and Clay Record is glad to be of this service, and sincerely hopes that Question and Answer No. 2,000 is not very far off.

* * *

WHO IS TO GET BENEFIT OF REDUCED RATES?

MANUFACTURERS of clay products have been waiting for months for railroad rate reductions on their products. There is no argument that such reductions are not essential. However, the manner in which some producers are looking toward freight reductions bears warning.

There are two views held by manufacturers of clay products with regard to reduced railroad rates. One is that a reduction, when it comes, will be passed on to the public. This is held to be essential by this class of manufacturers in order to stimulate buying, and it is claimed by this group that it is mainly for the reason of encouraging construction that a reduction in railroad rates is requisite.

There is, however, a group of manufacturers who are looking to a freight rate reduction as a means of enabling them to make a more substantial profit on their ware. Such a viewpoint is to be questioned, and we fear that the manufacturer will learn to his regret the error of such a policy.

When other manufacturers pass on a

1922 Will Reward Those Who

reduction to the consumer, it will be necessary for every manufacturer to follow, and the anticipated gain will evaporate to nothing. The better plan is to get your house in good order.

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SCHWAB SAYS GET READY FOR BIG THINGS NOW!

IN TWO SPEECHES before American business men recently, Charles M. Schwab of the Bethlehem Steel Corporation urged courage and faith, and even optimism, for the future of American industry. He stated that America is on the threshold of an almost unbelievable prosperity, and that we are on the eve of greatest development.

This statement gives much hope to the business man, especially since Mr. Schwab shows the sincerity of his message by the action taken by his own concern, which recently voted to spend several million dollars in the gamble that an industrial boom is not far away.

The following excerpts are quoted from Mr. Schwab's speeches and merit the reading of every business man.

"Economy is the basis of everything, and if the working man will give an honest day's work for an honest day's pay, he will not need to fear competition from any other source."

"The labor problem will be solved only when the employer and employee can sit down and calmly discuss their troubles."

"What a splendid world this would be if we could get back to normal by the mere process of passing laws."

"I know of no better stimulus for creative ambition than the hope of personal reward. Intelligent self-interest—not selfish—cannot be equalled in securing results in business. It surpasses any form of communal co-operative ef-

fort. When competition has free reign, there is ample restraint and ample protection for the public interest."

"However wild may be your business dreams of the future, I will wager they will not be as wild as the realization which many of you younger men will see. If I had my life to live over, to-day is the time I would start."

"We have just had a board meeting of my companies in New York and we decided at once to undertake the expansion of works that we are running at only 20 per cent. of their capacity."

"If we are right in believing that the future holds prosperity for us, what better time for us to spend our money for the extension that will be necessary in the future? *We can do it cheaper now than at any other time and when prosperity comes we will be ready to reap the benefit of it.*"

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REDUCE RATES—WAGES WILL FOLLOW

THE PROPOSED railroad strike has been called off. The carriers have practically guaranteed workers that no consideration will be given to wage reductions until July of next year. Thus the anticipated reduction in rail rates, due to lowered operating costs brought about by a reduction of railroad labor wages, will not be forthcoming for at least the next eight months.

Undoubtedly, the whole issue in the railroad problem is whether the railroad executives are to reduce rates or wages first. There is no doubt but that both rates and wages must come down.

General Atterbury of the Pennsylvania System pointed the only way out of the dilemma when he recommended that the railroads forego wage reductions for a time and lower transportation

charges. This solution of the problem has also been urged by the public group of the Railroad Labor Board.

After the decision that was made last week, this is the only alternative left, and the railroads might well follow the policy of the United States Steel Corporation and others, enunciated as follows: "Price reductions first; wage reductions later."

If affairs with the railroads are permitted to go on as they have in the past, with no progressive changes, the return of prosperity is remote. We will just be drifting with no port in sight.

Wage reductions cannot be made, but transportation rates must be reduced. This is plainly the situation and the railroads, Government and public may as well acknowledge it.

In other industries, business foregoes profits and passes dividends in order to spend money to reduce costs so that it later may be in a position to reap rewards that are bound to come when proper preparation is made.

It seems that the railroads would do well to adopt this policy and reduce transportation rates now. A reduction in cost of commodities and of living will naturally follow, and business will go ahead. It will then be a simpler matter to make wage reductions in railroad labor. Everything will be set for it.

It is true that in the meantime the railroads will not be earning money and railroad equipment will not be manufactured. However, for the short space of time that this policy will be in effect, there will be enough business from construction industries and general business to make the industrial situation sound and expedite a return of prosperity. The scheme will eventually put the railroads on a sound earning basis—and by *eventually* we mean within a reasonably short length of time.

Of What Value to You is an Appraisal? You will want to read an article on this subject which is now in preparation

What Life and Service Can be Expected of a Periodic Kiln? An article on this subject by J. H. Kruson will be presented to you soon

What Effect Do Impurities in Fire Clays Have on the Resultant Brick? You will learn the answer if you will read an article which will appear in Brick and Clay Record shortly, written by C. E. Bales, chemist, Louisville Fire Brick Works.

How an Illinois City Was Induced to Build More Houses of brick—is an interesting story in preparation by a prominent face brick manufacturer and will appear in the near future

Have Reduced Their Costs!

A. F. B. A. *to* CONVENE at WHITE SULPHUR SPRINGS

*West Virginia's Beautiful Mountain Country to be Scene
of Important Meeting on November 30, December 1 and 2*

THIS YEAR the American Face Brick Association will meet at White Sulphur Springs, W. Va. for its annual convention. The dates have been announced as November 30, December 1 and 2. This is a change in scenery, since the conventions in the past several years have always been held at French Lick, Ind.

It is a little too early as yet to announce the program which is in the molding, but Secretary Hollowell is working hard to arrange a meeting that will make every member glad that he attended. It can be said, however, a large part of the program will relate to activities within the association and of direct interest to each manufacturer.

TRADE ASSOCIATION VERY NECESSARY

The trade association is a necessary agent in the development of American business. Its activity in the promotion of better business practices, advancement of technical processes, simplification of production, standardization of quality, commercial arbitration, and so forth, all make for more efficient industry and business. American industry is in a critical situation. Its future is greatly dependent upon the success the trade association has in each particular industry to steer the manufacturer in the right course by giving him information that will enable him to conduct his business more efficiently; by informing the public of facts it should know about the industry and by maintaining a certain set of ethics and ideals for the individual manufacturer to aspire to. An association which does this in the proper manner has strength and a rightful

place in American business. Those manufacturers who belong to such an organization will gain the respect, faith and confidence of the public.

The American Face Brick Association is one of those national associations for which there is a distinct need, and whose policies are correct. Its membership should feel elated over the good it has done for its industry and the public as well. The Government is giving greater recognition to the trade association, and this activity should grow in the immediate future. Thus it is paramount that every member should realize both his responsibility and duty to carry on association activity and promote it to his best ability.

LARGE ATTENDANCE EXPECTED

The A. F. B. A. has always enjoyed a full quota membership attendance at its annual meetings. This year it is expected that a greater attendance than ever will be at hand at the sound of the gavel at the opening session. Growth in trade association activity, the need for knowing the prospects for next year, the determination of policies for the immediate future and the duty and responsibility of the manufacturer to his industry, the Government and the public, makes it more desirable for the face brick manufacturers to be present at this year's meeting than any in the past.

The Greenbrier Hotel at White Sulphur Springs, which will be the headquarters of the convention, is a new and magnificent hotel of modern steel construction, absolutely fireproof, and equipped with every convenience that makes for the guest's



Who Could Not Turn in a Score Around Par on a Golf Course with Inspiring Surroundings Such as These at White Sulphur Springs?

Two Beautiful Views of the Greenbrier, the Stately Hotel of Colonial Type at White Sulphur Springs.



comfort. The hotel is situated in a very picturesque spot and is surrounded by broad meadows and gentle slopes of a wide valley, encircled by wonderful mountains and magnificent forests.

During the spare hours of the convention—that time when one wants to get a breath of fresh air and relaxation—there are plenty of things to do at White Sulphur Springs. Clay tennis courts, one of the finest golf courses in the country, mountain trails, driveways along the riverside and thru the forests, centuries old, afford several ways of recreation.

White Sulphur Springs is located on the main line of the Chesapeake and Ohio R. R. and is situated in the southeastern portion of the State of West Virginia, right near the border line of Virginia.

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No Reduction in Price of Common Brick

The upward tendency in the construction industry which has been reflected in these reports for the past two months stands out strongly in the current issue. In the Digest of August and September an improvement was apparent in the relation of orders on the books to stocks on hand. It was also expressed in the report of the manufacturers as to outlook for the future. This month the tendency has had its effect upon the price of brick, says the Monthly Digest of the Common Brick Manufacturers' Association for November.

It was predicted in the Digest that a stiffening of demand would show itself in an equalization of prices. While the composite price drawn from the current reports stands almost exactly as it was a month ago, being \$13.80, as against \$13.87 on September 1, the variation between the highest price and

the lowest price is less than it was a month ago. In some sections, where overcompetition had driven the price below cost of manufacture, there are found advances in the price due to the better demand for brick. In other sections, where the price was based upon fractional production, which always sends up the unit price, there is a lowering of the quotation, due to a larger production from the plants. Altogether the price quotations in this issue are on a much more businesslike and wholesome basis.

There is as yet practically no relief in freight rates, and until the rate upon brick is reduced many large building centers which receive their supply by rail will continue to pay on the job a price that is too long on the transportation side. In Ohio a reduction in the rate on paving brick is already in effect and the Public Utilities Commission has promised that like reductions will be effective on building brick.

A few months ago the producers of heavy building materials stood almost alone in their contention that exorbitant freight rates were blocking building operations. Railroad officials denied it; the Interstate Commerce Commission showed no sympathy with the clay industry; but today there is general recognition of the fact and such wide-spread discussion of high freight rates that it is believed some relief must surely come soon. The Unemployment Conference in Washington put emphasis upon the fact that high freight rates prohibit the shipment of heavy materials in many localities, holding up building and contributing to unemployment.

Sharing interest with the threatened railroad strike on the front page of all the newspapers has been the subject of high freight rates. It may be expected that when the glare of publicity is turned on to any evil as it now is upon this one it cannot long exist. The brick manufacturers may take considerable encouragement from the fact that the whole country is at last agitating the subject of freight rates. To the brick manufacturer the freight rate has a double bearing. It puts an excessive cost upon his fuel supply, as well as an excessive rate upon the delivery of his finished product. The reduction of freight rates will almost immediately be reflected in the price of brick delivered on the job.

The coming of winter, which results in the closing of many plants in the colder climates, will find a smaller stock of building brick on hand than has been recorded in many years. If the general pick-up in industrial conditions continues the brick men will find themselves pressed to take care of the

demand when the spring season opens. The chance that fuel may cost less, and a possible reduction in some other elements of manufacture will tend to deter those manufacturers who might operate during the winter from piling up stocks against the spring demand. Practically every manufacturer of brick was caught in the early part of this year with stocks that were produced at the highest cost known to the industry, and with a declining market were forced to sell them at a loss.

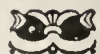
About 75 per cent. of the manufacturers contributing to this month's Digest state that the outlook is fair to good. This optimism seems to be about equally distributed among the ten districts into which the membership of this Association is divided for the purpose of this report. Every section seems to have felt something of the business revival.

Out of a total of 104 manufacturers reporting 54 say that manufacturing costs have not changed during the past month. 14 report diminishing costs, and only six report increased costs. Those reporting the increase are in the western and mountain states.



Aladdin Co. Will Establish Branch

The Aladdin Co., manufacturers of ready-cut houses, will establish a branch in Los Angeles, Cal., according to A. A. Patterson, the Pacific Coast manager, because of the immense sale there. The company plans on investing \$400,000 in a plant there, which will give employment to about 250 men.



C. B. M. A. PLANS GREATEST CONVENTION *in* ITS HISTORY *at* ST. LOUIS

EACH YEAR the Common Brick Manufacturers' Association of America has made it a point to announce at its annual convention some new, important activity. An even greater new activity will be announced at the next convention, which will be held at the Hotel Statler, St. Louis, Mo., beginning Monday, January 30, and adjourning at noon Wednesday, February 1. Indications are that the convention will draw even a larger attendance than the very highly successful meeting of last year, and preparations are being made to accommodate more than 400 representatives of the clay products industry.

The meeting will be held in the ballroom of the Hotel Statler, the largest and most modern hotel in St. Louis, which room has served as a meeting place for the most important organized gatherings held in the United States in the last few years, including such meetings as those of the American Bankers' Association and the U. S. Chamber of Commerce.

COMMERCIAL SIDE TO BE DISCUSSED

The first session will commence at two P. M. on Monday, January 30, and there will be two sessions on Tuesday and a forenoon session on Wednesday. Nearly all of the time will be devoted to subjects pertaining to the commercial side of the common brick business, dealing especially with merchandising problems. At least two or three speakers of national reputation—really big men—will be present, and their names will be announced later.

A complete report of the work of the Joint Technical Research Committee, which is now actively engaged in plant study, will be made before this convention.

At the first convention of the C. B. M. A. there was presented the plans of a national advertising campaign, followed up with architectural service. This was approved and at once engaged upon, is still going strong.

At the second convention held in New York City there was

Very Useful Cyclopedia

Simmons-Boardman Publishing Co., Woolworth Building, New York City, has just published the "Material Handling Cyclopedia," which is a volume of extensive information divided into several sections. The definition section is a dictionary covering the devices, accessories and terms used in material handling. The hoisting machinery section is a treatise on the construction and operation of hoisting apparatus as used in modern industry for handling, loading, and unloading material. The package-handling conveyor section is a treatise covering the construction and application of continuous elevators and conveyors for handling packed material. The loose material conveyor section is a treatise covering the construction and application of continuous elevators and conveyors for handling loose materials. The elevator section is a treatise covering the development, construction and application of hand, belted, electric, hydraulic, and special elevators. The trackless transportation section is a treatise covering the construction and application of trackless devices used in handling materials. The industrial rail transportation section is a treatise covering the construction and application of rail transportation devices used in handling material. The handling system section treats of the methods of handling and storing coal, sand, gravel, stone and lime. In addition, there is a catalog section of advertisements of the manufacturers of material-handling equipment. The price of this book in cloth binding is \$10, and in leather, \$15.

introduced the Ideal wall construction, and this feature has succeeded as a business stimulant for brick manufacturers far beyond the hopes of the C. B. M. A. This organization has on record in its office more than 100 communities where the Ideal wall is being used. Not one adverse criticism has been received from either architect, builder or owner of this form of construction, but on the contrary, every mail has brought in new evidence of the absolute practicability and economy of the Ideal wall.

MISTAKE TO STAY AWAY FROM CONVENTION

As mentioned before, at St. Louis a new and greater activity than any of the others will be proposed. It is believed that this feature will result in immediate benefit to the members and one which will require the active participation of every member if approved. It is really so big and of such vital importance to the industry that Secretary Stoddard feels it will be a serious mistake for any common brick man to stay away from this meeting and miss the opportunity of discussing the proposition on the floor of the convention, and of knowing the proposition from the start. The nature of the new activity will not be revealed until it is presented at the convention.

In New York last year the Ideal wall construction was announced in this manner. As a result, the large auditorium of the Hotel Pennsylvania was packed with clay products manufacturers at the session during which the Ideal wall was described. This was undoubtedly the largest attendance of brick manufacturers at any one session held in recent years.

At St. Louis there will be a large exhibit of advertising material, an exhibit of photographs of Ideal houses from all parts of the country that were erected within the last year, and another exhibit of new house plans which are being prepared, enlarged upon the present architectural service rendered by this association.

Reduces Cost Instead of Paying Dividends

W. L. Handley, Jr., General Manager of Bradford (Pa.) Brick & Tile Co., Maker of Famous "Bradford Reds", Says \$500,000 Is Being Expended by This Company to Reduce Costs

Editor's Note—Herewith are published three more of the many letters that "Brick and Clay Record" received pertaining to the editorial which appeared in the October 4 issue. These letters are simply a continuance of the series that were published under the head of "What Others Say" which appeared in the October 18 issue. This completes the series on the editorial which had as its theme the reduction of production costs in clay products manufacture.

THE WRITER has been an interested reader of your article of October 4 and the comment in the 18th issue regarding the necessity of cutting cost in clay plant. Our company saw this necessity confronting us two years ago, and adopted a policy immediately along this line, otherwise we figured that our years were numbered if we went along on the old basis. So instead of paying out dividends or expanding we planned our program to put into effect on the first break of the depression that was sure to follow. Some work we absolutely had to put in immediately and that went ahead, but the bulk of the work we have put in since January 1, 1921. We have expended now close to \$400,000, obtaining a tremendous saving in cost, and have very little increased our production, except that we get more production on account of dependable machinery and

less dependence upon fuel and labor. Our quality is also improved so that we hope to get back to pre-war quality because of less dependence on labor.

MUCH PIONEER WORK NECESSARY

Considerable amount of our cost cutting necessitated pioneer work but most of the ideas were borrowed from the more progressive industries, particularly the cement industry regarding the moving of raw material, and from the steel industry regarding fuel economy.

Our completed program calls for an expenditure of approximately \$500,000 and it will take another year to complete same. Our remaining amount will go more, however, into expansion which we feel is not necessary yet, but it will also help to further cut our cost.

One matter that should be brought up is the fact that cost cutting requires considerable time, investigation and planning, and the services of competent experts to consult with in their particular line.

We went all over the country investigating various plants and it took considerable time. We also found it necessary to plan everything out in detail months ahead and check over with the other parts of the plant that had to be dovetailed together. We cannot emphasize this point too much as it is quite expensive to change because of a slip-up in the drawings.

Outlines Cost Saving Equipment and System

Howard Frost, President, Los Angeles (Cal.) Pressed Brick Co., a Progressive Pacific Coast Concern, Says Many Plants Can Effect Substantial Savings

IT IS GENERALLY ACKNOWLEDGED that the clay products industry, as a class, has not kept pace with other leading lines of industry in adopting the most approved equipment and methods of manufacture.

Many clay plants, both new as well as old, can effect a substantial reduction in manufacturing costs by some change or improvement. Frequently the outlay will pay for itself in a few months' time, but even a saving of 25 per cent. annually is well worth while, particularly if it reduces labor turnover.

Before going further it is well to emphasize the importance of having complete cooperation from the operative end. In our own case a reorganization was necessary before any real efficiency was possible.

Beginning with the clay itself, its transportation or handling should be accomplished in some mechanical manner. In practically all cases the use of wheelbarrows can be eliminated for this purpose. At one of our plants underground belt conveyor to dry pans displaced wheelbarrow brigade of from seven to ten men a day or a return on the cost of about 400 per cent. annually. At another one of our factories unloading and conveying equipment saved 14 to 15 men per day.

THINKS CRUSHER SHOULD BE INSTALLED

For grinding shale or large lumps of clay a first reduction should be made by use of a crusher. This increases dry pan capacity, while saving on repairs. A disintegrator is equally suitable to dry pan for grinding soft clays but not shale. The cost is one-quarter to one-third that of a dry pan, upkeep ex-

pense is even proportionately less and requires only half the power.

A grinder for tailings means greater economy in the grinding department. Mechanical unloaders for wet pans are a good investment if two or more pans are in use. Heavy malleable iron elevator buckets are well worth the extra cost as compared with lighter weight pressed steel. Experience has taught us that "home made" buckets are not a paying investment.

A mechanically operated screen increases screening capacity and displaces screen tenders.

Next perhaps comes the consideration of a "poidometer" which eliminates pug mill man and assures a uniform temper of clay at all times.

Much might be said about keeping up dies, as this is one of the most important features in respect to quality of ware.

Waste clay conveyors from machines will make a big saving as compared with the inefficient way of cleaning up scrap from floor during or after a day's run. I believe it is safe to say that every brick machine should have a waste conveyor.

Waste heat dryers are, of course, generally used. Recording thermometers are important in proper regulation of dryers.

JACKLIFT TRUCKS GREAT ASSET

Jacklift trucks are one of the best of labor saving equipment designed for raising, transporting and lowering of heavy loads. They are used in practically all lines of industry and are inexpensive in cost and upkeep.

At one plant that the writer visited Jacklift trucks were used in the delivery of coal to kilns, and in a number of terra cotta plants for the delivery of pugged clay to pressers. In our own case \$6 a day was saved by the use of two Jacklift trucks in the terra cotta department, which means that in less than three months they paid for themselves. Four wheeled trucks used on the floors will soon repay the cost of equipping with solid rubber tires. Electric elevating platform trucks may be

In a recent letter Howard Frost made the following statement:

"It may be of interest to you to learn that during the last two years we have invested over \$200,000 in labor—and cost—saving improvements, such as referred to in my article. We have a program mapped out for 1922 and 1923 that will amount to about \$150,000."

used in the setting of some kinds of material as well as in unloading of kilns. Our experience is that one such truck displaces one man and delivers 25 per cent. more ware to kiln, even tho the haul is an unusually short one. For unloading kilns electric truck and operator has displaced two men and horse-drawn truck, at the same time increasing output 25 per cent. A gasoline or electric dump truck for hauling kiln loss, cleaning up yard, and so forth, is a good investment. For this purpose we use a Clark "Tructractor" (gasoline) which will do the same work in half a day that an ordinary horse-drawn dump cart will do in a full day.

ELECTRIC POWER REQUIRES LITTLE LABOR

Electric power is the most economical, as labor and upkeep are reduced to a minimum. Our experience at plant recently electrified is a saving of approximately 60 per cent. annually on the investment compared with cost of fuel oil, engine room wages, boiler compound and repairs. Where steam is used, some good automatic stoking system should regulate firing of boilers and all live steam lines should be insulated with pipe covering. Direct chain drives are especially desirable where economy of space is a consideration, and, generally speaking, prove cheaper in the long run than belt, pulleys and line shafting, with the latter's cost of lubrication, upkeep and greater loss in power transmission.

Pyrometers are now commonly in use by progressive plants and if used intelligently they are one of the best investments,

reducing losses, fuel and frequently time. For high temperature, 2,000 deg. F. or above, platinum couples are necessary but for lower heat base metal will prove as efficient, at less cost.

A study of flue gas analysis and proper application of draft gauges results in economic burning of fuel. In other words it produces the maximum benefit.

ELIMINATE UNNECESSARY DUPLICATION

Proper attention should be given to neat and orderly arrangement of stock piles, eliminating, as far as possible, unnecessary duplication. Remember that those having occasion to visit the plant will be impressed favorably or otherwise by the appearance of the plant. Time is saved in taking inventories with assurance of far greater accuracy.

Electric transfers are commonly used by larger plants for handling material from dryers to kilns. In some cases a Ford engine is used instead. Either is cheaper and more efficient than man or horse power.

Kilns should be kept in good repair and flues cleaned regularly, not merely when kiln is out of use. Some experimenting in different ways of setting may result in increased tonnage or lower burning cost per ton of ware set. Piece rates should be substituted, so far as practicable, for day wages and will result in a saving to the company as well as increased earnings to the men. We found this more intelligible and satisfactory to the men than "Standard time and bonus."

LARGE PLANTS SHOULD HAVE PURCHASING AGENT

Graphic charts may be used to advantage by the superintendent and executive in many ways. For instance, production month by month, operating costs, sales, deliveries, and so forth. Plants doing an annual business of a million dollars or over should have a qualified purchasing agent and store-room in charge of storekeeper. A small plant cannot afford this but a large plant cannot afford to be without specialized training and attention to matters ordinarily covered by purchasing and supplies.

It is desirable that the superintendent have conferences at least monthly with factory department heads, encouraging suggestions and criticisms for the common good.

Most of the above recommendations have been profitably adopted by this company at its factories and all will be carried out together with other similar improvements as rapidly as possible.

Continuous Burning in Periodics Halves Cost

W. E. Dunwoody, President, Standard Brick Co., Macon, Ga., Says Accurate Cost Accounting Is Important Need in Industry

I WISH THAT I HAD TIME to give the subject the thought that it should have. No intelligent man could take issue with you. Of course, the necessity of reducing waste and cutting production costs is of the greatest importance, and if not absolutely necessary, this is especially true in the Southeast, where brick are selling at such ridiculously low prices. Unless there are some changes, those companies who do not reduce waste and cut production costs will be forced out of business at an early date.

My own company is using every means to reduce waste and reduce production cost, and to that end are calling in the services of ceramic engineers and experts on every process used in the manufacture of brick. We are paying particular attention to the digging of our clay, and are using the most modern methods.

USE MINTER SYSTEM

In coal, we are burning the best, realizing that it is the cheapest in the long run. The wages of our men are as low as we have any desire of putting them, and at the present cost of living they cannot be reduced further. In order to cut the cost of burning, we have adopted the Minter style of burning, and are constructing three batteries of nine kilns each, making a total of 27 Minter down-draft kilns. We find this system is cutting our cost in half.

In regard to freight rates, we are making every effort to keep rates down as low as possible and are fighting proposed increases.

Our traveling men are working on a guaranteed salary and a commission on sales.

Our advertising is receiving the closest attention by ex-

perts, and as a result of such we are doing business now in the greatest volume ever known in the history of our company.

USE APPROVED ACCOUNTING SYSTEM

Our purchasing is done by our general superintendent, K. W. Dunwody, who is a graduate of Georgia School of Technology and is Scotch, and has the proverbial Scotch idea of thrift and appreciation of the value of the dollar.

Our management is under departmental scheme which was arranged by Wolf & Co. of Chicago. Our cost accounting was also installed by this company, and we keep it checked up to the minute.

This last is one of the most important subjects which you have suggested. The common brick manufacturers of the United States should adopt as far as possible a uniform cost accounting system. The vast majority of the manufacturers of common brick do not know their brick cost, and really have no conception of how to arrive at the cost of their brick. The consequence is that most of them would be greatly surprised if they knew what their brick really cost, and they would not be so willing to "buy orders" by cutting the price of their brick.

HAVE PRIDE IN YOUR PRODUCT

Another feature which should be considered by the brick manufacturers is the fact that brick are not sold to any extent on the basis of quality, or if to any extent, the question of quality does not occupy the place of importance that it should occupy; in other words, "A Brick is Not Always a Brick," and if we insisted upon all customers considering the quality of our brick and its many points of superiority over other building materials, and in some cases the superiority over one's competitors' brick, we would all turn out better brick and would take more pride in our product, and in that way we would raise our standards and command the respect of our competitors more than we do at this time. Pride in one's product is very necessary, and is very necessary to progress. We cannot stand still, and without particular pride in the quality of our products, we soon retrograde.

The company who makes an inferior brick is a discredit to the entire craft and brings the product generally into disrepute, offering an easy mark for cement products and other products in competition with brick.

I wish I had time to write more at length on this subject, which I regard as one of greatest importance. The consumer asks for prices on brick, and the majority of the manufacturers let the price be the controlling factor, instead of showing them that some brick are worth more than others, and letting the quality be the controlling factor as far as possible instead of letting prices absolutely control.



A. S. T. M. Tests on Clay Products

The triennial publication of the American Society for Testing Materials has just been published. It is a comprehensive volume of 871 pages of miscellaneous tests and specifications, on metals, building materials, lubricants and other subjects. The parts that interest clay products manufacturers most are the following subjects:

Standard Specifications on Drain Tile, serial designation C 4-21, of 16 pages. Drain tile are put into three classes—farm drain tile, standard drain tile and extra quality drain tile. The specifications cover drain tile made of shale, fire clay, surface clay and concrete. The topics treated are: I. Materials and Manufacture; II. Chemical Tests and Requirements; III. Physical Tests, (a) Strength Tests of Drain Tile, (b) Absorption Tests of Drain Tile, (c) Freezing and Thawing Tests of Drain Tile; IV. Physical Test Requirements; V. Visual Inspection; VI. Testing, Inspection and Rejection.

Standard Specifications for Paving Brick, serial designation C 7-15, consisting of 11 pages. The topics treated are: I. Rattler Test, testing principally for abrasion; II. Visual Inspection.

Standard Specifications for Building Brick, serial designation C 21-20, consisting of six pages. The topics treated are: I. Standard Size; II. Sampling; III. Physical Tests; IV. Classification of Brick.

Standard Specifications for Clay Sewer Pipe, serial designation C 13-20, consisting of 12 pages. The topics treated are: I. Materials and Manufacture; II. Chemical Tests and Requirements; III. Physical Tests, (a) Crushing Tests, (b) Hydrostatic Tests, (c) Absorption Tests; IV. Physical Test Requirements; V. A. S. T. M. Sizes and Dimensions; VI. Workmanship and Finish; VII. Markings; VIII. Inspection.

Standard Specifications for Cement Concrete Sewer Pipe, serial designation C 14-20, consisting of 12 pages. These specifications and tests are practically the same as for clay sewer pipe.

Standard Specifications for Fire Tests of Materials and Construction, serial designation C 19-18, consisting of five pages. Topics treated are: I. Control of Fire Tests; II. Classification; III. Test Structures; IV. Test Samples; V. Conduct of Fire Tests; VI. Floor and Roof Tests; VII. Non-Bearing Partition Tests.

Standard Methods of Test for Refractory Materials Under Load at High Temperatures, serial designation C 16-20, consisting of five pages.

Standard Methods of Test for Porosity and Permanent Volume Changes in Refractory Material, serial designation C 20-20, consisting of three pages.

Standard Methods of Test for Softening Point of Fire Clay Brick, serial designation C 24-20, consisting of three pages.

Standard Methods of Ultimate Chemical Analysis of Refractory Material, including Chrome Ores and Chrome Brick, serial designation C 18-21, consisting of 11 pages. Topics treated are: I. General Refractories, (a) General Considerations, (b) Solutions Required, (c) Methods; II. Chrome Ores and Chrome Brick.

Standard Definitions of Terms Relating to Sewer Pipe, serial designation C 8-15, consisting of four pages. Topics treated are: I. Forces Acting Upon Sewer Pipe; II. Raw Materials; III. Pipe; IV. Parts of Sewer Pipe; V. Joints; VI. Finished Product, (a) Material, (b) Covering, (c) Defects; VII. Identification.

Standard Definitions for Clay Refractories, serial designation C 27-20, consisting of three pages. Topics treated are: I. High Heat Duty Brick, (a) Clay Fire Brick, (b) Silicious Clay Fire Brick; II. Intermediate Heat Duty Brick; III. Moderate Heat Duty Brick; IV. Low Heat Duty Brick.

Recommended Practice for Laying Sewer Pipe, serial designation C 12-19, consisting of three pages. Topics treated are: I. Preparing Trenches and Foundations for Pipe Laying; II. Pipe Laying; III. Back-filling Trenches.

This entire volume can be purchased from the American Society for Testing Materials at 1315 Spruce Street, Philadelphia, Pa., for ten dollars, in cloth binding. The individual standards listed above can be purchased at 25 cents each.



Find Clay Deposits in Ontario

Deposits of clay suitable for the manufacture of drain tile, flower pots, and so forth, have recently been discovered at Desbarats, Ont., Canada. It is claimed that this clay can also be used for manufacturing cement. Deposits are only 28 miles from Sault Ste. Marie, which is an excellent distributing point for clay products.

Snappy Items on Subjects

Chicago Plans Enlarged Show

The Second Annual Own Your Home Exposition in Chicago will be held in the Coliseum, March 25 to April 1, inclusive. The official announcement is made by Mr. Fred C. Balthaser, assistant manager with the further information that advance reservations of exhibition space justify the prediction that the 1922 exposition will surpass in all particulars, and especially in the number of exhibits, the first annual show of last spring.

Robert H. Sexton, managing director of the Chicago Exposition, basing his statement on recent personal investigation in a half dozen mid-west cities, says that 1922 is very apt to prove a record breaking year in the building of one and two-family dwellings. Mr. Sexton's belief is based on the evidence of approximate stabilization in the material and labor market, improvement in financial conditions and the evidence that no appreciable headway has as yet been made in eliminating the housing deficit which has accumulated during the last four or five years.

In Chicago the advance reservations made by plumbing and heating indicate that the exhibits of these appliances will be the most complete ever brought together in a similar exposition. The banks and real estate men are showing a keener interest in the 1922 event than was evinced in this year's exposition and several unique and valuable educational campaigns on acquiring and equipping a home will be prosecuted during show week.

Chicago's first exposition of this character attracted approximately 100,000 visitors and, for a first show, the volume of business actually transacted by exhibitors was exceptionally large.

* * *

How Production Costs Have Been Reduced

That great reductions in production costs can be made by the installation of modern, labor saving devices and efficient operating systems, is conclusively proven by the letters received from prominent men in the industry in response to the editorial in the October 4 issue of *Brick and Clay Record*. In this issue are published three more letters which no clay products manufacturer should fail to read.

* * *

New Canadian Rulings Are Serious

The special committee of the Refractories Manufacturers' Association, consisting of J. J. Brooks, Jr., J. M. McKinley and J. D. Ramsay, which has been considering the effect of the proposed Canadian Customs Tariff Amendment whereby fire brick manufactured in this country for export into Canada will have to be branded or marked with the words "Made in U. S. A.," has decided to approach the matter thru the Canadian Manufacturers' Association. As a consequence, the latter association has been advised that if the ruling is made effective as planned there are four courses that can be pursued:

1. Brand all brick made in the United States, "Made in U. S. A."
2. Make up and carry a special stock of brick for Canadian use, branded in accordance with the regulations.
3. Make up specially on receipt of order after specifications received from Canadian customers.
4. Stamp or mark each brick before shipment is made.

The first procedure is impractical, especially with splits, soaps

and the smaller sizes. The carrying of special stocks, as proposed in the second consideration, would involve a large expense, since many manufacturers sell two or more brands of brick and at times two or three burns of each brand to the Canadian trade. The third suggestion would make it necessary for a Canadian customer to place his orders in advance. Moreover, any overages that were not of the proper burn or that might be in excess of the required number would have to be scrapped. It would seem, therefore, that any such orders would have to be treated as special shapes and priced higher than at present. The fourth suggestion seems to be the most practical. This, however, will entail an additional cost of at least three dollars and in some cases as much as nine or ten dollars per thousand.

It is thought, therefore, that presentation of the subject in this way to the Canadian Manufacturers' Association will start a movement which will have much more weight with the Canadian customs officials than any protest that individual manufacturers or the association might make. It would seem that if this proposed ruling is made effective January 1, 1922, that the price of fire brick to the Canadian consumer will be greatly increased.

* * *

Suspicion Two Association Policies

A complete analysis of the functions of trade associations has been made by the government. Out of the 20 functions determined as a result of this analysis three or four are under direct suspicion. Chief among these are two: price agreements and limiting distribution. Eight per cent. of the associations investigated were engaged in price work. These associations would do well to consider stopping these practices before they are compelled to do so. If they do not, there is no alternative left the attorney-general except to take legal action against them.

While it has not been determined whether certain of these practices are illegal under the Sherman act it is not of much importance. Public sentiment is such that if it was decided that they were not illegal under the Sherman act as now constituted, the act would undoubtedly be amended to cover them.

* * *

Eliminate Waste in Burning

Many losses occur in burning in periodic kilns, both in fuel and time, which by careful experimenting and recording of results can be overcome by every plant. The article in this issue on "How to Reduce Fuel and Time in Burning" gives the methods to pursue and explains how every clay products manufacturer can experiment for himself.

* * *

Over Half of Homes in U. S. Rented

54.4 per cent. of the homes of the United States in the year 1920 were rented, 28.2 per cent. owned by their occupants and were free from incumbrances, and 17.5 per cent. were owned but mortgaged, according to census bureau statistics made public recently. The proportion of mortgaged homes in 1910 was 15 per cent. or 2.5 per cent. less than in 1920.

The total number of homes enumerated in 1920 was 24,351,676. Of this number 12,943,598 were rented and 10,866,960 were owned by their occupants, and for the remaining 541,118 the

of Current Interest

facts as to tenure were not ascertained by the enumerators. Of these owned homes 6,522,119 were free from incumbrance and 4,059,593 were incumbered, while for the remaining 285,248 the status as to incumbrance was not reported.

The total number of homes in Illinois was given as 1,534,077, of which 846,071 were rented, 658,260 owned, 370,221 free from incumbrance.

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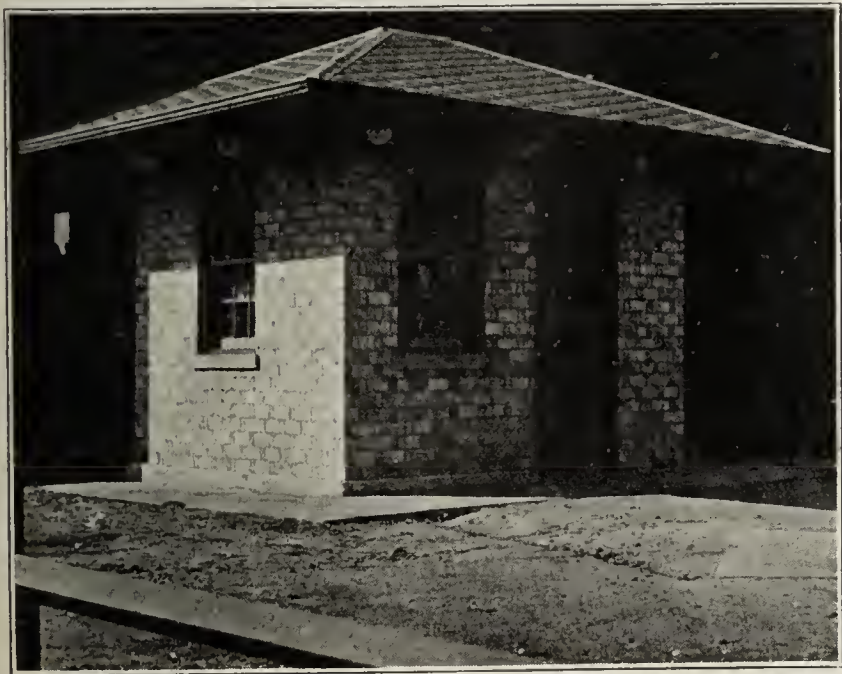
The Open Price Movement on Trial

In the Hardwood Lumber Association Case the open price movement is on trial and if the U. S. Supreme Court decides in favor of the association the Sherman law will be a dead letter. This is an error on the part of the government for, even should it be proved conclusively that the Hardwood people misused the plan that can not be accepted as a condemnation of the plan in general. It is likely that this much mooted question will be decided next month. The outcome and the decision of the case is of tremendous importance to all trade associations. The story in this issue "Hardwood Case May Make Sherman Law Dead Letter" describes the proceedings of the case before the Supreme Court.

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The Ideal Wall in Chicago

A sample of Ideal wall construction in Chicago can be seen on one of the city's much traveled boulevards. Altho the building code does not as yet officially permit this type of con-



A Gasoline Filling Station on One of Chicago's Boulevards, Built with Ideal Walls.

struction there evidently were no objections to the building of the gasoline filling station shown here. The brick are ordinary Chicago commons laid in chocolate mortar. The unusual construction is a good advertisement and attracts considerable attention.

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Canadians to Meet at Toronto

The twentieth annual convention of the Canadian National Clay Products Association will be held in Toronto on Tuesday, Wednesday and Thursday, January 24, 25 and 26, 1922. Further particulars will be announced at an early date.

At a recent meeting of the executives of the C. N. C. P. A. it was decided to continue the opposition to the Ontario Government selling prison-made brick in competition with other brick. A committee was appointed consisting of J. S. McCannell, chairman, T. Kennedy, W. J. Nicholson, F. B. McFarran, Wm. Burgess and G. C. Keith to give this matter publicity and insure if possible the cooperation of the Canadian Manufacturers' Association and the members of the legislature in bringing this about.

Ryland H. New, president of the Hamilton (Ont.) & Toronto Sewer Pipe Co., Ltd., is president of the C. N. C. P. A. and Gordon C. Keith, 435 Grace Street, Toronto, is secretary.

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Reduce Costs by Spending Money

On a barren and unproductive spot, devoid of water, and utterly uninviting, faith and enterprise built a modern and highly successful clay products plant. The Los Angeles Pressed Brick Co. at Alberhill, Cal., is practically a separate community. Houses were built by the company for its workmen and the water supply developed to make conditions livable. The equipment is of the most efficient and approved type and high grade clay is present in abundance. The story of operations at this large plant, as described in this issue, is highly interesting.

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20,697,204 Dwellings in U. S.

According to a statement by the Bureau of Census the population of the United States enumerated at the fourteenth census as 105,710,620, was grouped into 24,351,676 families residing in 20,697,204 dwellings, the average number of persons to a family being 4.3 and the average number of persons to a dwelling, 5.1.

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To Standardize Varieties of Paving Brick

One of the activities of the Department of Commerce is the standardization of products and the elimination of the multiplicities of style and form in which commodities are manufactured. An investigation of the paving brick industry revealed that some 60 different varieties of paving brick have been made and sold in recent years. Usually the manufacturer is not responsible for this multiplicity of styles.

On November 15 there is scheduled a meeting, at which will be present representatives of paving brick manufacturers, users and others interested, at which time there will be made an attempt to reduce the number of varieties manufactured to a more reasonable number.

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Get Together With the Bricklayer

The brick manufacturer has at last found that he must advertise his product just the same as any other manufacturer and the surest way to get results is to enlist the aid of every possible agency. The ordinary bricklayer can probably do as much for the manufacturer as many dollars spent in advertising. The men who make the brick and the men who lay them should get together since their interests are identical. Bricklayers are in a receptive mood as the story "Let the Bricklayer Advertise Your Brick," in this issue proves.

Greenough and Hollowell on Trade Associations

The "Right Side of Trade Associations" is the title of an article which appears in the November issue of "The Nation's Business." R. D. T. Hollowell, secretary American Face Brick Association, and Maurice B. Greenough, secretary National Paving Brick Manufacturers Association, are contributors to the above article.

Mr. Greenough is quoted as saying:

"Unless the trade association does contribute directly or indirectly to the profit of its members, it cannot survive. It must accomplish such a result just as its individual members must earn a profit if they are to continue to do business.

"You cannot have something for nothing, and a trade association may not exist for the purpose of public service unless there is a reactive service to the industry that maintains it.

"The trade association is a means of aiding the prosperity of industries. There is nothing ambiguous about it. It can have no other object and have an existence.

"The fact that some trade associations have bent their efforts in the aid of their members along lines that are illegal or in violation of principles of honest relations with the public does not alter the fact of their object.

"The trade association is simply the means of doing those things which the members individually must do for their own perpetuation, at their own expense, except that they do them jointly with other members of the same industry having like necessities, at less cost than anyone could do such things singly."

The following quotes that part contributed by Mr. Hollowell:

"Something has been said of the activities of the brick associations. There is a very definite instance of organization work, intended to benefit members, and yet serving the public at the same time. The American Face Brick Association is persistently trying to convince you and me that we ought to build with brick. Associations of makers and dealers in other building material are quite as busily engaged in spreading the truth about their industries. And so long as the work is done properly the public is educated and not misled.

"The face brick men have developed for the use of the prospective home owner an architectural service consisting of some two hundred separate designs for small houses. For any design which pleases the prospective builder the association furnishes, at a nominal cost, working drawings, specifications, and bills of material. These designs have been planned by numbers of architects thruout the country. The actual cost to the association for the above plans was in the neighborhood of \$35,000.

"Another example of association cooperation is also furnished by the brick men. Four organizations of makers of burned clay products are working with the Bureau of Mines and Standards to cut down fuel wastes. Fifty to 60 per cent. of the units of heat now go up the chimney unused, and, since the burned clay industry ranks next to the railroads as a user of fuel, the possibilities of saving are plain. Coal saving, while it puts money in the manufacturer's pocket, is, in the long run, a public benefit."

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Checking Up on Trade Associations

From an investigation made by the Federal Trade Commission, which distributed some 2,750 copies of a questionnaire, there would seem to be somewhere under 2,000 trade associations in the United States. 1,773 replies were made to the questionnaire, of which 161 were to the effect that the association was rather inactive or completely dissolved.

The questionnaire related to activities in collecting and dis-

tributing statistics. 141 associations said they were distributing information about prices after the transactions had been closed, and nine others replied that they had distributed such information but had suspended this activity pending the Supreme Court's decision in the hardwood case. 376 associations said they compile and distribute other statistical information, which is most commonly about stocks on hand, quantities produced and orders. 768 associations reported that they have no statistical activities.

Whether or not the Supreme Court in deciding the hardwood lumber case, in which the court has now for a second time heard arguments, will pass upon the legality of open price competition plans remains to be seen. If the court does not settle this question in the hardwood case, it will deal with it in a later case. The second count of the indictment returned in August in the so called cement case brings into the question directly the legality of the Eddy plan of open competition.

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Seven Factors in Industrial Waste

The principal factors contributing to industrial waste according to the Department of Commerce are: (1) Lost labor during depressions; (2) Speculation and over-production in booms; (3) Labor turn-over; (4) Labor conflicts; (5) Failure of transportation, fuel and power supplies; (6) Loss due to process and materials; (7) Excessive seasonal operations; and (8) Lack of standardization.

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New York Brick Reaches Low Mark

Altho there is at present only a ten days' supply of basic building materials in New York dealers' hands, there is no immediate danger of a general building construction tie-up, says the Dow Service daily building report of October 22, 1921, even if the threatened railway walk-out had occurred.

Preparations on a larger scale than ever before attempted have been in progress for some time in anticipation of such an eventuality.

Common brick manufacturers rushed all sorts of material into this market for immediate sale. Some of this brick brought only \$14.50 a thousand, wholesale. Some of it was sold at even less than that price. The run of the market, however, stayed at \$15, with a small quantity of the highest grades still being held at higher levels. This drop in price from the \$16 level touched only two weeks ago was due to the fact that the only hope of many manufacturers to carry out their plans to complete their 1921 brick burning before winter sets in was to ship all the brick they could into this market, sell them at whatever the market would pay, so as to be able to load their barges with coal and get them up the river again before the railroad strike developed to actual walk-out.

As far as the market is concerned there is today no economic reason for brick prices to drop. Ordinarily brick is being absorbed into actual construction work as fast as it comes in. The dealers have not been stacking brick for winter reserve until possibly the last few days. The supply of brick up the river, while ample for current winter needs, is not adequate for winter and early spring building requirements should there be the least cessation in burning between now and cold weather. In short, the enforced and quite unexpected price drop in this basic commodity will be of brief duration if brick burning is interrupted by fuel shortage or price advance due to strike-resultant embargoes.

There is no disposition on the part of building material manufacturers, distributors or dealers to foster anything like a general price advance. The present dealer pressure on com-

on brick for lower levels and the recent manufacturers' price drop in cement sustain this fact. But the tax exemption ordinance on habitation buildings expires in April, and buildings now half completed should be enclosed before cold weather comes and when delivery stampedes occur.

The experience obtained by dealers, jobbers and manufacturers during the war and in the previous transportation tie-ups fortifies the building industry in the face of the present pending emergency and at the week end various phases of this preparation were apparent in different departments.



30 YEARS, SERVICE *in* UNDERGROUND TUNNEL LEAVE COMMON BRICK GOOD *as* EVER

ALTHOUGH remarkable performances of burned clay products in structural steel and other fields are more or less ordinary occurrences, every now and then the sterling qualities of hard burned clay ware are so forcibly brought to



A Part of the Van Buren Street Car Tunnel Showing Where the Brick Walls Have Been Cut Thru.

The attention of the layman that they cannot help but be noticed.

Our attention was recently called to a piece of brickwork which was encountered in the construction of the new Union Station in Chicago. Due to its remarkable state of preservation and the excellent service rendered, it deserves special mention.

About 30 years ago the Chicago Surface Lines Co. found it necessary to build a line running into the "Loop" near Van Buren Street. The line had to go under the railroad tracks of the Union Station and also under the river. This meant the building of a tunnel approximately one-third of a mile long, extending from Clinton Street to Franklin Street. The material selected for the building of this tunnel was common brick. It was built 40 feet wide and approximately 18 feet high, and 2½ feet thick, 7 rows of brick being used. The brick used were ordinary, hard common brick, some of them vitrified, and cement mortar was used in the laying.

BRICK AS GOOD AS NEW

Since 1892, or for very nearly 30 years, the waters of the Chicago river have been flowing over this brick work, and the passenger trains of four railroads have been rumbling over it, and today the individual brick and the entire structure are in as good a state of preservation as they were the day they were first put in.

In the designing of the new Union Station engineers found it necessary to lower the tracks several feet, and this has necessitated cutting into that section of the tunnel which is

under the tracks. An easy matter, it was thought, but unexpected difficulties arose. The steam shovel, which was used to remove the dirt on top, was first experimented with. The shovel went thru the hard packed ground and rocks and overcame all these obstacles easily until the rim of the tunnel was encountered.

Repeated attempts of the shovel to pick holes in the brickwork and to tear the tunnel to pieces availed absolutely nothing. The hard steel teeth made no more impression on the sturdy masonry than it would on the face of a rock. In the thirty years under ground brick and mortar had formed such a strong bond that the walls of the tunnel became practically as one piece.

USE 1½-TON WEIGHT TO BREAK TUNNEL

Failing to make any headway with the bucket, an iron ball weighing 1½ tons, such as is commonly used to break up scrap iron, was attached to the boom, and attempts were made to break the arch by repeatedly dropping this weight on the brickwork. One whole Saturday morning was spent in trying to break up the tunnel with the iron ball, but very little headway was made. It was finally decided to blast, and in this way an opening was made, after which the weight could be used more effectively to break up the brickwork. After the rough work had been done, as described, it was necessary, in order to bring the level down to the correct height, to use bull points and sledge hammers. It was, however, a tedious process, as it was practically impossible for the workmen to take out more than one brick at a time.



A View of Part of the Van Buren Street Tunnel with Crown Cut Off. A Steam Shovel Could Make No Headway In Cutting Thru the Seven Rows of Brick.

The brick showed not the slightest sign of deterioration or disintegration, and every brick was just as sound as the day it was taken from the kiln.

HARDWOOD CASE MAY MAKE SHERMAN LAW DEAD LETTER

Long Standing Hardwood Lumber Association Case Before Supreme Court is Hotly Contested—Open Price Policy on Trial—Statement of Limitation of Association Activity Expected Soon

WHEN CHIEF JUSTICE TAFT nodded his head to signify that the first day's hearing in the now famous Hardwood Lumber case had come to a close after the special counsel engaged by the Department of Justice to argue the Government's side of the appeal now before the Supreme Court of the United States had spent a full hour in an attempt to convince the highest court in the world that open-price associations were a menace to the peace and prosperity of this country, the attorneys who foregathered in the Senate corridors opined that the Government had lost its case and that the Supreme Court would decide to reverse the lower court decision.

This happened on Wednesday, October 13, after Judge Boyle, who appeared on behalf of the Hardwood people, had used up an hour and 20 minutes of the two hours allotted to his side. The following day, Assistant Solicitor General Beck took exactly 60 minutes in his effort to tie up the late Mr. Eddy's book—"The New Competition"—to the reporting plan followed by more than 300 members of the Hardwood Lumber Association and the so-called market reports issued by its secretary.

ASK COURT TO QUASH OPEN PRICE MOVEMENT

These representatives of the Government were very frank in their statements that much more was involved in this case than the mere appeal from the decision of the Circuit Court of Appeals of Tennessee, which had sustained the action of the lower court in perpetually enjoining the defendants from collecting and disseminating information relative to the production, shipments, stock and current market quotations on hardwood lumber. They called attention to the fact that a recent questionnaire issued by the Federal Trade Commission had brought out the fact that 141 trade associations were still operating open-price plans out of more than 1,600 that had answered the questionnaire, with a large but unknown quantity which had desisted temporarily, but which would start up again with renewed vigor if the Supreme Court did not, at this time, effectually quash the open-price movement by a definite decision which would hold up the Government's hands in its present attempt to declare the open-price plan a violation of the Anti-Trust Act.

HARDWOOD SECRETARY CALLED "NAIVE"

Moreover, these representatives of the Department of Justice hinted, rather than stated, that no case had previously been brought to their attention which so clearly marked the operation of an open price plan as a conspiracy in restraint of trade; and then they made the positive statement that they never expected to find another case which would offer so promising an opportunity for the Government to win an open price case. Indeed, it is in the record that Assistant Solicitor General Beck said that never would a secretary so naive as the secretary of the Hardwood people be allowed to function—and get his employers into trouble.

It was with considerable reluctance that the Government

admitted the death of the author of "The New Competition," and those who were fortunate enough to hear the argument were impressed with the fact that the Government regretted its inability to positively state that the late Mr. Eddy had had something to do with the forming of the Hardwood Lumber Association or with the starting of its reporting plan. As it was, they had to content themselves with the theory that someone connected with the Hardwood Lumber Association must have read the late Mr. Eddy's book before the reporting plan followed by that organization was put into effect. They made no effort to disguise the fact that the whole open price movement was on trial and positively stated that, if the Supreme Court decided in favor of the Hardwood people, the Sherman law would be a dead letter.

HARDWOOD ATTORNEYS PUT UP GREAT FIGHT

The attorneys for the Hardwood people made a splendid fight against what seemed insuperable odds. The price of hardwood lumber had "kited" in the period in which the plan was in operation, and the secretary of the Hardwood Lumber Association had sent out a number of printed "market letters" which were, to say the least, ill-advised. He wrote to the members who were contributing information to the plan, asking them to write him "frankly and freely," telling him whether or not the plan had benefited them. This they did; and he in turn published extracts from these letters, in his effort to secure new subscribers to the plan. On these letters, written by members of the Hardwood Lumber Association to their secretary, the Government based its contention that the object of the plan—curtailment of production and enhanced price—had been fulfilled, and that the conspiracy was proved out of the mouths of the defendants themselves.

These letters, these "market reports" and these production and stock statistics as published by the secretary of the Hardwood Lumber Association were in the evidence that was first presented to the United States Court in Memphis and afterward offered in evidence in the Circuit Court of Appeals in Tennessee—and the Government had won, in each case. They were afterward presented in the Government's case as submitted to the Supreme Court of the United States in the hearing had several months ago. The attorneys for the Hardwood people had no course open to them but to admit the genuineness of the evidence, while arguing against the Government's contention that it proved a violation of the Anti-Trust Act.

GOVERNMENT PLACED OPEN PRICE PLAN ON TRIAL

The weakness of the Government's case lies in its attempt to put the open price plan on trial and to decide how far trade associations can legally go in their work of supplying statistical information (as well as price information) to their members, by tying up the open price plan to an already twice-won case against a single trade association, which at worst may have used a legitimate means of attaining an

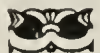
illegal end. Whether or not the Hardwood people did, thru the use of the information collected and distributed by their secretary, unduly enhance and maintain the price of hardwood lumber may or may not be proved by the evidence. Whether they did or did not curtail production on account of the statistics he furnished them is another matter which it would seem could be proved beyond a reasonable doubt.

OPEN PRICE PLAN NOT PROVEN WRONG

But there is a grave question as to whether their use of the open price plan can justly be used to condemn the plan. Permits to carry pistols are granted to those who can show clean records and the need of such protection as a pistol is

supposed to give. When a man is arrested for carrying concealed weapons without a permit, the man is on trial, not the pistol.

Announcement is made that the Supreme Court will recess from October 24 until November 7. It may be that a decision will be handed down early this month, and in the meantime the promised statement with regard to the limitations under which trade associations may legally act in the matter of statistical information will probably be delayed. This statement, which rumor has it will be prepared jointly by the Attorney General and Secretary Hoover, will no doubt bear the President's signature.



CONFERENCE ADOPTS CONSTRUCTIVE MEASURES *to* SOLVE UNEMPLOYMENT PROBLEMS

THE UNEMPLOYMENT CONFERENCE which was assembled recently in Washington pursuant to a call by President Warren Harding, adjourned October 13, subject to a call by the Standing Committee which was formed to continue the work of the conference. Secretary of Commerce Hoover, chairman of the conference, said in part at the conclusion:

"To me the successful consummation of the conference marks a milestone in the progress of social thought. Aside from the pressure of war, I believe that this is the only conference held in Washington under the auspices of the Government where the ultra extreme in social thought have been brought together, and where the conference has come thru for actual constructive results, and parts in good will. We have found it possible to agree upon every major issue; to agree upon the emergency measures that are required,—the social background of those measures, and to agree upon the great principles that must be met if we are to have a recuperation of employment and industry."

FEDERAL AID FOR ROAD BUILDING URGED

The recommendations of the conference chiefly affecting the clay products industry can be summed up as follows: 1. Readjustment of railway rates. 2. Speedy completion of the Tax Bill. 3. Definite Settlement of tariff legislation. 4. Definite programs leading to the elimination of waste and regular employment in seasonal and intermittent industries.

The Sub-Committee on Public Roads urged speedy appropriations of federal grants for road building, similar to the assistance given by the Government in 1916 and 1919. It also urged every state to use all of the money available for that purpose without delay.

The Committee on Construction Industries made an exhaustive study of the three factors that are delaying construction; namely, financing, material costs, and labor costs, and recommended certain improvements that seem necessary. Unfair practices and the stoppage of work due to jurisdictional controversy were condemned. Readjustment of freight rates was also advised as conducive to a revival of building. It was further urged that as much as 20 per cent. of the cost of building could be saved if uniform building codes with variations due to climatic conditions, and based upon scientific knowledge, were adopted.

REPORTS OF COMMITTEES

The Committee on Agriculture said in part in its report:

"History is repeating itself. Previous wars have been followed by periods of depression which have in turn been followed by prosperity. Prosperity has come with the revival

of agriculture which has provided an expanding domestic market for manufactured products, thus restoring industrial activity with the employment of all classes of labor. This course of events is inevitable. We can only hasten or retard its progress."

The Committee on Transportation reported in part:

"Altho, even at the best we can expect, our domestic business conditions will inevitably reflect in some degree the general world prostration, and while we can not hope by and of ourselves to restore the fullest measure of pre-war prosperity, we could, if each of us individually would regard it as his duty and would determine without delay to "buy till it hurts," create a condition of business which, compared with the present would represent a marked degree of prosperity."

The suggestions of the conference to the mayors of the various cities included increase in public works and establishment of employment bureaus. Altho the Government can assist in solving the problem, unemployment was considered to be a community responsibility.

CITIES SHOULD DO ALL NECESSARY WORK

The following three recommendations of the Committee on Municipal Organization for Unemployment are very timely:

"The Mayor Committee should try to get the whole community behind the effort to speed up the construction of public improvements. In a period like this there should be the greatest activity in putting up new schools and other needed public buildings, and in necessary repairs and improvements in streets, bridges, sewerage, public utilities, parks, and other municipal works.

"Every effort should be made to provide real work by stimulating industry. Meanwhile, each industry should be urged as far as possible to keep together its own force by giving at least part time employment.

"In some cities "Spruce-Up" campaigns have proved good. In these every one is urged to do at once whatever is needed in the line of sprucing up his property. This applies both to public and private owners of property, to small householders and flat renters as well as to large companies, hotels, theaters, and so forth. It should be made clear to all that money spent in this way, stimulating the regular activities of industry, will help to reduce unemployment far more than any other aid."



"Before the pay envelopes can be filled the company's treasury must be filled. And only honest production and honorable selling can do that."

HOW *a* WEST COAST *to* REDUC



Locomotive Pulling String of Clay Cars on the Way to the Pit.

ACT I. Scene 1.

Time: 1916.
Place: Alberhill, Riverside County, California.
Setting: A frontier village, consisting of a store, schoolhouse, boarding house, blacksmith shop and seven or eight weather-beaten shacks. In the background barren hills spotted with sagebrush and occasional cactus—a hopeless spot, inhabited by Mexicans, several whites, lizards and horn toads.

Scene 2.

Time: Five years later—1921.
Place: Alberhill, Riverside County, California.
Setting: A modern factory, teeming with activity, cars on spur tracks filled with incoming supplies and outgoing finished ware. In the background neat hollow tile bungalows with tile roofs, shaded by trees and surrounded with flowers, for the workers, a schoolhouse and a community store.

GREAT TRANSFORMATIONS ACCOMPLISHED

Such is the transformation accomplished in a few years by the Los Angeles (Cal.) Pressed Brick Co. at this highly modernized plant at Alberhill, a plant which, even in its present efficient state, has not yet reached the ideal dreamed of by its president, Howard Frost. To envisage a model factory on what was practically a desert site requires something besides money. Courage and vision must be a large part of the plan, but in these concomitants Mr. Frost has not been lacking.

The clay was at hand, but materials, electric power, water and labor had to be brought in at a large effort and expense.

A high voltage power line supplies the 900 horse power which turns all the machinery—water has been developed for industrial and domestic use—miles of track have been built and model cottages erected for the workers. Under construction at the present time is a social center for the workers, where games, amusements and other attractions will be furnished. The up-to-date school building serves as a community center, where church services, lectures and entertainments are held.

HOUSES RENTED TO EMPLOYEES CHEAPLY

Five years ago, when the model hollow tile cottages were built, their surroundings were of the usual barren type such as are found in waste country. With the development of water supply, shade trees have made a remarkable growth, and every householder now has his garden of flowers and fruits. Here is one place where the rent profiteer would find no encouragement, for the company charges only a nominal rental of \$12 and \$13.50 a month for bungalows of three and four rooms. These are the original rentals fixed upon when the houses were built. More houses will be built as the plant is enlarged from time to time.

MODERN EQUIPMENT IN USE

Owning its own clay deposits, the company is independent of any other supply, and the development of these deposits for its other plants is now occupying a large part of the attention of the management. Work is being pushed on transportation agencies, which will expedite the haul from the mine to the railroad siding, adding to the efficiency which



A Panoramic View of the Large Plant of the Los Angeles Pressed Brick Co. All Kinds of Clay Prod

PLANT *is* PROCEEDING S COST

*se Identity is Not Revealed
Pressed Brick Co.'s Plant*



Equipment Used to Haul Clay Blocks to and from Dryer.

marks this plant as one of the most progressive among brick factories.

For the consumption of the Alberhill plant the clay is hauled by gasoline motor to the central crushing plant, located at the apex of the fan upon which arrangement this huge plant is constructed. From the Stevenson crusher the clay travels on a belt conveyor to the three individual units which, at the present time, comprise the manufacture. In the first unit fire brick and wire cut face brick of all textures are manufactured—in the second unit refractories, including machine and hand-made brick and blocks, and in the third unit hollow tile. All of the factory buildings, office and laboratory are constructed of hollow tile. A Bonnot machine and cutter are used for face brick and machine-made fire brick, and an American No. 290 machine and Chambers cutter are used in the hollow tile department. The wet pans for the hand-made refractories are driven by Link-Belt chain drive and are supplied with a "Wynn" automatic unloader made by the Clearfield Machine Co.

L. E. RODGERS DESIGNED DRYERS

From the machines the ware travels to the waste heat dryers by means of a gasoline motor. The two 10-foot fans in connection with the dryers are of the L. E. Rodgers design and are driven by Link-Belt chains. Encircling the half-circumference at the hot end of the dryers is an electric trolley, which conveys the trucks of dried ware to the kilns. The kilns lie between this electric line and the railroad track, which completes the other circle of this fan-shaped plant.

At the present time the plant is equipped with the round

32, 36 and 38 foot down-draft kilns, and the management contemplates the eventual installation of a continuous tunnel kiln. Oil is used as a fuel, and two air compressors of Worthington manufacture equipped with feather valves are employed. A machine shop includes a lathe, shaper, drill press, and for mold making and carpentry work a power saw and circular band saw.

CLAYS ARE HIGHLY REFRACTORY

A visit to the testing laboratory of this plant is most interesting. The clays of the company are marvelous in their scope, and according to Mr. Burchfiel, the chemist, the possibilities of the large variety of materials are unlimited in producing the highest grade of refractories. The plant is in charge of Harvey Gardner, superintendent; R. S. Stone, assistant superintendent; John Mills, superintendent of clay mines, and the organization is complete in every detail.

"We put Alberhill on the map," might well be the slogan of the Los Angeles Pressed Brick Co., but the pride with which it views the present transformation is nothing to that which it expects to experience in a few years more, when all the tentative plans now being considered have been put into effect.

The company owns and is operating two other plants in Southern California; one almost within a stone's throw of the post office in Los Angeles and one in Santa Monica, 15 miles distant.

EMPLOY EFFICIENCY ENGINEERS

In keeping with the general progressive spirit was the engagement last year of a nationally known firm of industrial



ed Out at This Plant Tho Probably the Company's Greatest Activity Is the Manufacture of Hollow Tile.

or so-called "efficiency engineers," which improved very largely the organization and the operating conditions, studying and revising time-saving methods. The cost system of Ernst & Ernst was installed, and today the Los Angeles Pressed Brick Co. may be compared favorably with the most up-to-date concern of any description in the land.

One result of the work of the efficiency engineers has been the installation of a planning and production department.



The Air Compressors Which Furnish the Necessary Air for the Los Angeles Pressed Brick Co.'s Many Kilns.

This department oversees all orders from the time they are entered until they are delivered on the job, and much of the confusion that naturally prevails between the office and factory has thus been eliminated. It has tended to promote better and closer relations between these two branches.

Mr. Frost is a strong believer in advertising and has proved beyond a doubt that "it pays to advertise." Upwards of \$1,000 per month is spent in newspapers and local periodicals. The phenomenal increase in business is largely attributable to this far-sighted policy. The mild climate of Southern California operates in favor of lumber and other cheaper materials, and the well-directed advertising campaign has converted many to the use of brick, hollow tile, roofing tile and clay wares of all kinds.



Freight Rate Case Will Soon Be Decided

The final oral argument in the long fight to have freight rates reduced, which is being waged by the Hollow Building Tile Association, American Face Brick Association and the National Paving Brick Manufacturers' Association will be presented before the Interstate Commerce Commission at Washington on November 10 and 11. The case is extremely complicated and involved calling not only for a reduction but for a change in the basic rate in some instances. The firm of Gallagher, Kohlsaat & Rinaker, attorneys, and Francis B. James, attorney, are handling the case for the three associations.



Cleveland Building Show to Outdo All Others

Nearly six years ago the builders and building material men of Cleveland, Ohio, inaugurated the strictly building material show, which has since been copied in a dozen or more cities. Now they are planning what will perhaps be one of the largest shows of this sort ever staged in America. It is the American Building Exposition, to be the first attraction in the new \$5,000,000 municipal auditorium, January 4 to 14 inclusive. The object is to stimulate interest for next year.

The Cleveland Board of Lumber Dealers is taking the entire stage of the convention hall floor at a space cost of approximately \$10,000 and will put on a mammoth community lumber exhibit. The Builders Supply Board, composed of some twenty building supply dealers, will use more than \$6,000 worth of space for a community brick exhibit, while the Cleveland Builders Supply & Brick Co. will take identically the same space on the opposite side of the hall for its individual exhibit.

On this floor, which has a ceiling height of 60 feet, will be some six or eight cottages and bungalows, completed exteriorly in frame, brick and stucco. The interiors will be only partially finished to show the application of different laths and plasters, and the space within will be utilized for the display of various materials and building specialties. Exhibits of marble, granite, sand and limestone will be provided upon a correspondingly elaborate scale.

Sponsoring the exposition is the Builders Exchange of Cleveland. This organization, by the way, has the largest membership of any body of its kind in America, the explanation of which is in a measure indicated by the fact that in this effort the Exchange decreed that there should be profits only to the exhibitors and decided to rebate all earnings to them pro rata according to the space they had bought. The Exchange has grown up on this same community spirit.

Last year Cleveland spent more than \$78,000,000 for new buildings. Next year they expect to spend even more than that, helped along by the stimulation of this exposition, the housing shortage and the already increasing interest in the building prospects. Following the building show in 1916 the city set a new yearly record, which stood until war prices overshadowed it. Today prospective builders hold more than 90,000 vacant lots in Greater Cleveland.

The exposition will be under the direction of Ralph P. Stoddard who managed the first show. Richard G. Collier, who was associated with him then, and also with the New York Show in 1917, will be assistant manager.



Sends Ideal Wall Booklet to Foreign Fields

Milton H. Andrews, who has become well known among clay products manufacturers thru his activity in promoting the Ideal or brick hollow wall, has just published another



View of One Corner of the Well Equipped Laboratory at the Los Angeles Pressed Brick Co.'s Plant.

booklet covering this kind of construction. Before this last edition was off the press two weeks, 15,000 copies had been ordered and shipped.

LET *the* BRICKLAYER ADVERTISE YOUR BRICK

*Texas Bricklayer and Editor of "Southwestern Bricklayer"
Tells Why Manufacturer and Mason Should Get Together
—Can Convert More Builders to Brick Construction*

By Wade H. Lockett

THE BRICKLAYERS ARE GLAD that at last the brick manufacturers have awakened to the fact that unless there is a better understanding between the mechanic who places his product in the finished building and the man who manufactures the brick, both are to suffer equally by the large amount of buildings now being erected by inferior material.

Until a few years ago, in the southwestern states, you would be able to count upon your fingers the brick residences in towns of 5,000 and 10,000 population and the bricklayer who was trying to make a market for his labor was unable to get any assistance from the brick manufacturer in his vicinity, in trying to dispel from the mind of the prospective builder that the first cost of a brick house was not so far above other materials and that it was the cheapest investment in the end.

BRICKLAYER'S AND MAKER'S INTEREST IDENTICAL

Now that the brick manufacturer has at last found that he must advertise his product the same as any other business we find small brick residences springing up around us, and the bricklayer is being benefited in as great a measure as the manufacturer. At last the bricklayer has some one to turn to, to secure necessary data to refute the statements made by the lumber dealer, that a poor man cannot build a brick home on account of the cost.

In the smaller towns a prospective builder will in nine cases out of ten, go to some neighboring carpenter contractor for advice when he is ready to build his home and even if he asks for information in regard to a brick house this carpenter will at once take him to a lumber man who will quickly show him by mis-statements that he will be unable to build of brick, and by assisting him in getting a loan on a house to be built of lumber, will deprive both the bricklayer and the brick manufacturer of legitimate business.

WHAT THE BRICKLAYER CAN DO

When the brick manufacturer quits lending assistance to efforts to lower bricklayers' wages and helps to make it possible for a bricklayer to be steadily employed thruout the year he will find an able assistant in educating the public to the real merits of brick construction.

There are bricklayers in all the smaller towns who hear of the prospective builder before even the architect is called in and if it were possible for the bricklayer to insure a loan from other than the lumber interests many small houses would be built of brick that are now being built of lumber. If the lumber interests can finance construction of wooden houses with the added risk of them being destroyed by fire before they are paid for, it seems that brick manufacturers could establish loan companies in the different cities for the purposes of making loans to people who want to build of brick and thereby create much business for themselves.

BRICKLAYER CAN CONVINCE THE BUILDER

Bricklayers' unions are established in most cities of 10,000 and 15,000 population and it is very easy for the brick manufacturers in the vicinity of these locals to secure the names and addresses of all bricklayers in their territory thru the secretaries of these unions and any literature or statistics placed in the hands of these men will do more to stimulate the industry than advertisements placed in magazines, as a bricklayer with his practical knowledge of the merits of brick construction is more liable to convince the prospective builder than the highest paid advertising expert.

The bricklayers of Texas have for years attempted in their feeble way to advertise brick construction by the publication of the "Southwestern Bricklayer," but have received very little assistance from the brick manufacturer, but now that they seem to understand that the interests are identical we hope for a better understanding with the manufacturers.



1922 Good Roads Show in Chicago

Announcement has been made by the board of directors of the American Road Builders' Association that the next annual convention and good roads show will be held in Chicago, Ill., on January 17, 18, 19 and 20. The show was held in Chicago last year also and on account of the central location of that city will be given there again in 1922.

Because of the central location of Chicago, the fact that over \$1,000,000,000 is now available for building of roads, and the increased interest in road matters, the directors of the American Road Builders' Association are of the opinion that the coming convention and show will surpass any previously held and that highway engineers, contractors and officials will attend in greater numbers than ever before.



Southern States Improving

"Business conditions continue to show a moderate improvement in nearly all sections of the country," declares Archer Wall Douglas, chairman of the Committee of Statistics and Standards of the Chamber of Commerce of the United States, in his monthly review of the business situation in "The Nation's Business."

In August the outlook was discouraging, but now it is evident that "the burden of obligations will be mostly disposed of before the winter is past. Cotton is being sold freely and the farmer will dispose of most of his holdings by the new year."

This should assist the manufacturer of brick and tile in the

South, as construction in that section has been more backward than elsewhere; prices have been below bed-rock.

He concludes, "The belief is general that next spring will usher in renewed construction activity. The oil business seems to have struck bottom and started upward."

* * *

Increased Freight Rates Suspended

The Interstate Commerce Commission, Washington, D. C., has suspended until February 7, 1922, the proposed increases on brick, clay and burned clay products from the Central Freight Association territory to Sault Ste. Marie, Ont.

Charles C. McChord, Kentucky, has been selected as chairman of the I. C. C. for a term ending December 21, 1922. He is one of the older members of the commission and will complete the term of Edgar E. Clark, recently resigned.

* * *

Paving Brick Gives Fine Account of Itself

The following interesting testimonial of brick pavements was taken from the October issue of "Dependable Highways," the monthly bulletin of the National Paving Brick Manufacturers' Association.

"25 years ago Meadville, Pa., now a city of about 15,000, used vitrified brick on its first hard surfaced street. 21 miles of brick streets have been constructed since. All of this mileage is still in service except a stretch of a little less than 600 feet, which might be said to have suffered a 'complication of diseases.' Otherwise the maintenance cost has been 'practically nothing,' according to R. L. Phillips, city engineer.

"This year 62,000 yards of new brick streets were constructed of this type: Asphalt filled three-inch, plain wire-cut brick on a five-inch 1-3-6 concrete base and sand cushion. The contract price of the pavement from curb to curb, exclusive of the curb but including grading and all other expenses, was \$3.85 per square yard."

* * *

Beautiful Display Room

The new display of the Gaddis-Harrison Brick Co., of Columbus, located in its new offices and sales rooms at Fifth and Broad streets is one of the most attractive in the Middle West. As is shown by the accompanying cuts the display is artistically arranged to show the texture and colors which harmonize the



The Beautiful Face Brick Display Room of the Gaddis-Harrison Brick Co., Columbus, Ohio.

best with the room. Practically all of the samples in the display are rough textures with the colors ranging from red thru buffs to gray. The display does not intend to cover the full line carried or handled by the company.

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What Trade Associations Do

A bird's-eye view of tasks trade associations undertake to do are:

Adjustments	Insurance
Advertising	Investigations, Technical (Testing, et cetera)
Arbitration	Labor Problem
Classified Buyers' Guides	Legal Advice
Classification	Market Reports
Collections	Materials, Raw
Compilation of Trade Information	Methods
Conservation	Patent and Trade Marks
Cost Accounting	Production Problems
Credit Bureau	Research
Distribution and New Markets	Standardization
Eliminations of Excess Variety	Statistics, Production
Elimination of Abuses (Trade Practices)	Style Bureau
Employment Bureau	Safety
Foreign Trade Service	Technical Education
Freight Classification	Technical Information
Industrial Bureau	Trade Extension Work
Inspection Service	Traffic Department (Freight)
	Welfare

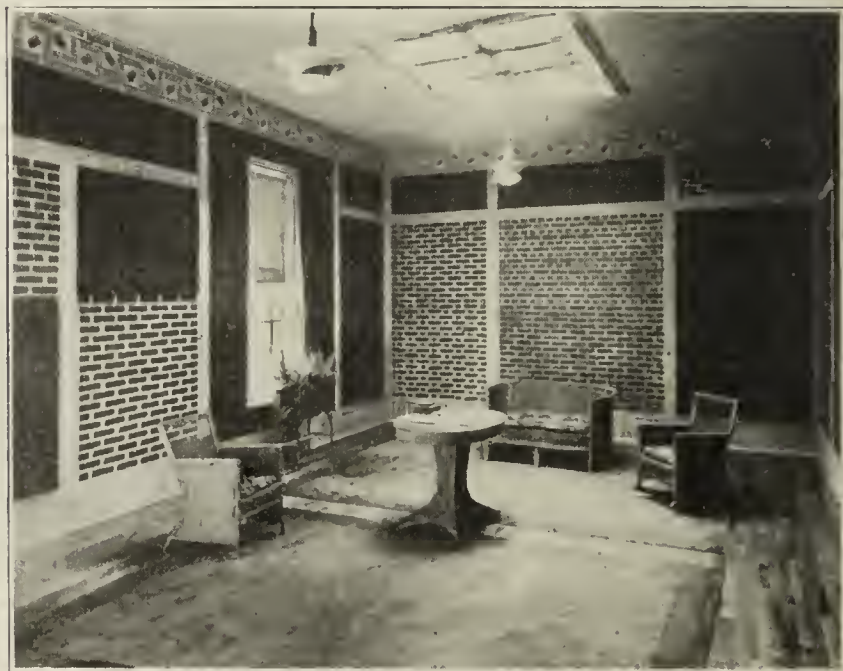
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Coals to Newcastle—Brick to Kent

"The shock of war has jarred us loose from so many of our ancient beliefs and practices that we have become somewhat hardened to surprises, but we have not entirely lost the faculty of being startled.

"We have known France as an exporter of bronzes, jewelry, hats, gowns, perfumes—beautiful and delicate things of adornment and pleasure. We were somewhat bewildered, therefore, to learn recently that the French are showing great activity in the making of the unlovely and prosaic brick. It seems that brick fashioned in France are being offered in Kent at 10 shillings a thousand less than the quotation of the local product.

"And, mind you, Kent is the citadel of the British brick industry."—So says "The Nation's Business" in its November issue. But why—The Nation's Business—do you call brick "prosaic and unlovely?"



Contrasts in Face Brick and in Mortar Are Brought Out Prominently in This Display.

HOW *to* REDUCE FUEL *and* TIME in BURNING

*Explains Factors Which Affect Burning Clay Products and Tells
How to Proceed to Eliminate Common Losses in Periodic Kiln*

By J. H. Kruson, Cr. E.

Acme Brick Co., Ft. Worth, Tex.

MARKED FLUCTUATIONS in burn time from plant to plant and between individual kilns are so common that longer burning periods than necessary are somewhat considered as an uncontrollable, necessary evil in the course of manufacture, and the losses in labor, time and fuel irrevocable.

Engineers have designed and built kilns of the continuous type, and devised methods of burning in the periodic type, which have reduced these losses. The majority of manufacturers are operating the periodic type, burning each kiln as a separate and independent unit, and in this discussion we will consider some of the improvements that could be made in the operation of the down draft type.

CAUSES OF A LONG BURN TIME

The duration of a burn should be no longer than the time necessary to raise a kiln of ware to its finishing temperature and hold it until sufficiently vitrified.

A thoro analysis of the factors that control the speed and

5. Indifferent or inexperienced firemen.
6. Lack of proper firing methods.
7. Wet kiln bottoms or flues.
8. Blocked flues.
9. Improper setting.

DETERMINE BURN TIME BY EXPERIMENTS

The speed of heat treatment depends upon the chemical composition of the clay and the kind of ware manufactured. Safe time and temperature schedules must be derived from plant experiments, and after determining a safe burning period, the loss resulting from a longer burn time than necessary should be stopped. Heat should be supplied in such quantities that the ware will increase in temperature as rapidly as possible without injuring it. To supply this heat, furnaces of adequate size and design are required, as well as flues and other heat passages, that must be proportioned so as to carry on complete and rapid combustion of the fuel.

Firemen, who are naturally uninterested and merely doing enough to hold a job, will make very little extra effort to burn a kiln off in a reasonable length of time when they have poor fuel to contend with. Often a grade of fuel is used that is not adapted to the furnace in which it is burned; consequently, more work is required, and as a result, the temperature lags behind schedule. Often, many firemen, who are conscientious workers, do not understand the proper manipulation of fires and draft to bring about the best results. The draft is too often neglected or ignored. If the heat is carried thru the kiln and out of the stack by an excessive volume of air, the finishing period will be somewhat longer than necessary. Long burns due to wet or uncleaned flues and poor setting are common occurrences.

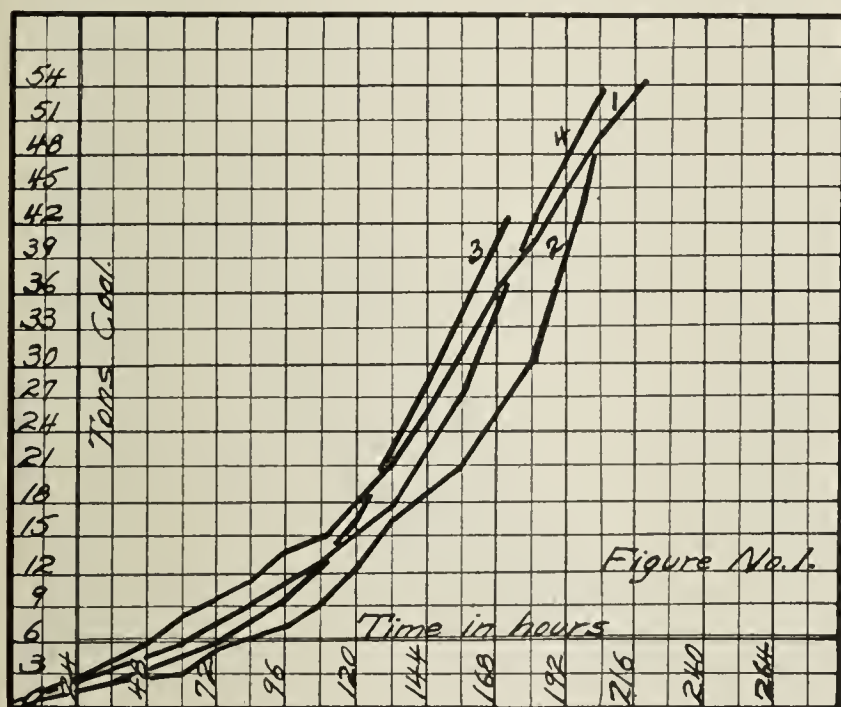
CAUSES OF EXCESSIVE FUEL CONSUMPTION

If a good grade of suitable fuel is available, if the kilns are well designed and proportioned, and if standardized methods of firing are used by reliable, experienced firemen, there would be little loss of fuel; these conditions, however, are seldom found.

Fire box design depends mostly upon the kind and grade of fuel to be used and the nature of ware manufactured; also, consideration must be given to the cost of firing, cleaning and repairs.

If the fires are broken down, clinkered and properly fired and the draft regulated so that the most value from the fuel is obtained, the services of one or more experienced firemen are needed. Where oil or gas is used for fuel, the firing operation is much simpler and handled easier. Poor firing is often due to the firemen who wish to save themselves some of this hot, fatiguing work required of them, and as a result there is a loss of fuel, time, labor and frequently ware.

The loss of heat due to an excessive volume of air thru



Showing the Variation in Time and Coal for Four Ordinary Burns of the Kiln.

time required to burn any product should bring out the underlying causes which would keep a kiln from finishing as fast as the ware will permit.

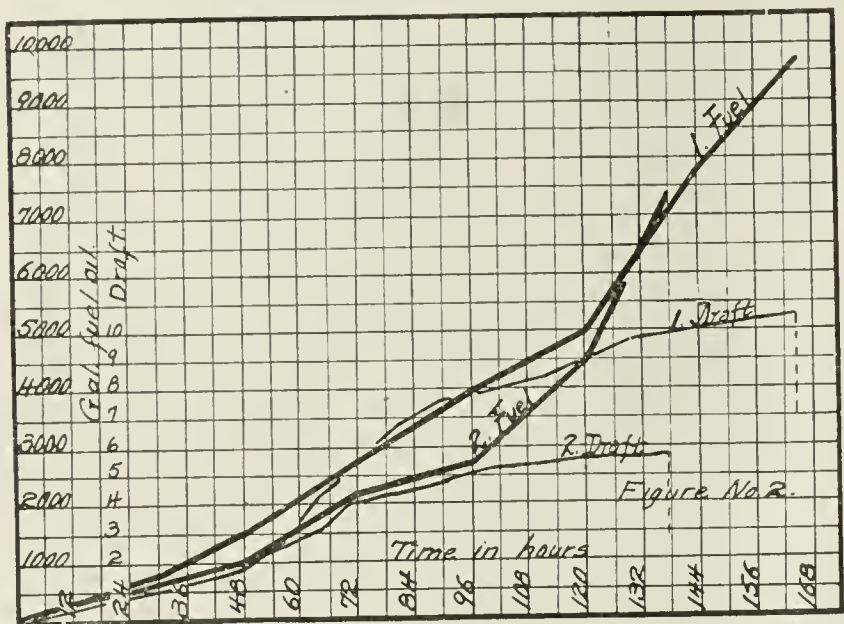
A longer burn time than necessary may result from causes such as:

1. An inadequate understanding of the burning characteristics and time required to safely burn the clay.
2. Poor kiln design.
3. Poor quality of fuel.
4. Fuel unsuitable for furnace design.

the kiln can be reduced by regulating the damper as the draft gauge indicates. Frequently, cracks appear thru which large volumes of cold outside air are admitted to the kiln. All cracks in the kiln walls should be daubed so as to exclude all air from this source.

FUEL CONSUMPTION VARIES WITH BURN TIME

A certain amount of heat is used in burning any clay product, and, as a rule, the longer the burn time the greater the losses due to radiation, hot flue gases, fuel falling thru grates, etc.



Curves No. 1 Show Effect of a Long Burn and Poor Regulation of Draft. Curves No. 2 Show Corresponding Effect of a Short Burn and Proper Regulation of Draft.

Fig. No. 1 shows the fuel consumption from four consecutive burns in the same kiln. The conditions for each burn were about equal as regards grade of coal, kind of ware, clay, tonnages set, kiln and weather conditions and firemen.

The firemen proceeded with each burn undoubtedly as they thought best. Draft gage, pyrometers and flue gas analyzer were not used. The percentage and quality of number one ware were about the same for all four burns.

The marked differences in fuel consumption and burn time are characteristic of what is happening on most plants, where the burning operation is in charge of the average fireman. There are many causes for such fluctuations, and after a kiln is finished it is a hard matter to determine the true cause or causes, especially if no records of the burn are kept.

BURNER'S ABILITY SELDOM CONSIDERED

An effort is made to secure the services of a competent engineer to take charge of a power unit, which costs ten or fifteen thousand dollars, while little thought is given to the qualifications of a burner who directs the firing (and often works himself) on a yard that uses from ten to thirty thousand dollars' worth of fuel per year.

If the engineer neglects his engine and a bearing melts out the result of his carelessness is obvious; however, when a kiln is burned a day or two more than necessary, it is seldom known, and if the burner is called to account for a fast dwindling fuel pile, he has several arguments that are hard to disprove without records covering each burn.

Curves No. 1 and No. 3, indicating burns No. 1 and No. 3 on Fig. 1, show a variation between the maximum and minimum burn time and fuel consumption, with a maximum difference of 11.8 tons of coal and 48 hours in burn time. Similarly, curves No. 2 and 4 show practically the same burn time, but a difference in fuel consumption of six tons. Assuming that coal was worth \$3.60 per ton at the kiln, then the cost of fuel per burn would be as follows:

Burn No. 1, \$190.75.	Burn No. 3, \$148.75.
Burn No. 2, \$168.00.	Burn No. 4, \$185.50.

This shows a difference of \$42 in cost of fuel between burn No. 1 and burn No. 3.

QUALITY OF FUEL OFTEN DISREGARDED

On Fig. 2, the curves marked No. 1 show the effect in fuel consumption of a long burn and a poorly regulated draft. Curves marked No. 2 show the fuel consumption, draft and burn time after the draft had been regulated and the necessary kiln atmosphere produced by the use of the draft gage and Orsat apparatus.

The burning period should be shortened gradually, a few hours each burn, and the results analyzed before any further attempt is made to shorten it.

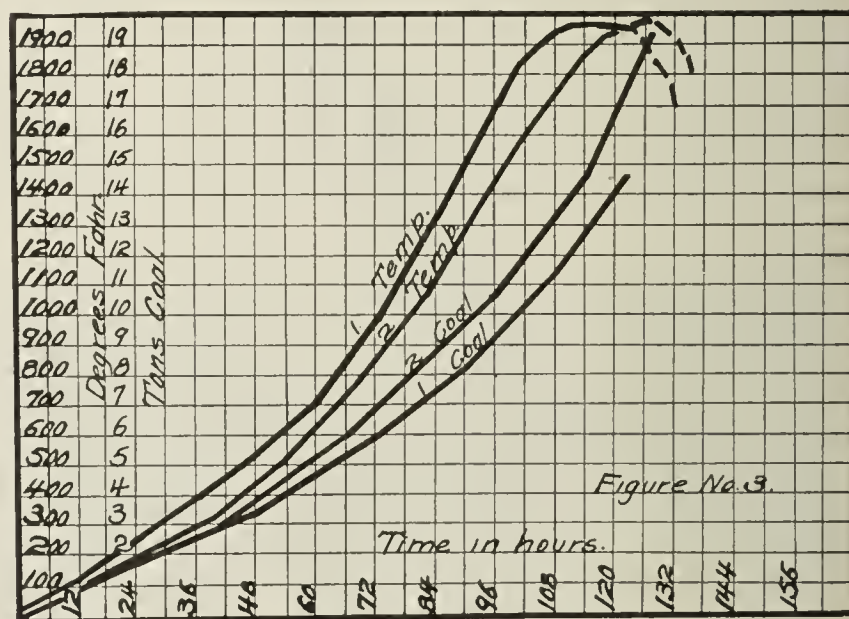
In many instances, the initial purchase price of coal governs the grade used. Undoubtedly, the safest method of determining the cheapest fuel in the long run is by running a series of coal tests on each kiln. In such a test the most important factors to be taken into consideration are:

1. Tonnage of ware burned per kiln.
2. Length of burn time.
3. Labor requirements.
4. Waste of fuel thru gates.
5. Quality of ware.
6. Amount of number one ware.

Where coal is hauled to the kilns in carts or in trucks it is not a difficult undertaking to weigh the amount dumped at each kiln and determine the actual tonnages used every twelve or twenty-four hours.

RESULTS VARY WITH DIFFERENT GRADES OF COAL

Fig. 3 shows the difference in coal consumption in the same kiln, set with approximately equal tonnages of similar ware each burn. Curves No. 1 are for burn No. 1, and show a total consumption of 14.5 tons. The coal used during the burn was a good grade of mine run bituminous and was well adapted to fill all requirements. The coal used in the burn represented by curves No. 2 was a mixture of 50 per cent. poor grade of fine mine run coal, and 50 per cent. of the good grade mine run similar to that used in the burn represented by curves No. 1. Some extra labor was required, besides 4.5 tons more coal was consumed during the burn. The difference in costs of fuel between the two burns follows:



Variations Due to Change of Fuel. Curves No. 1 Represent a Good Grade of Bituminous Mine Run Coal. Curves No. 2 Represent 50 Per Cent. of This Same Coal and 50 Per Cent. of a Poorer Grade of Coal Costing 62.5 Per Cent. as Much as the First.

Burn No. 1	Burn No. 2
14.5 T. at \$2.00 per T....\$29.00	9.5 T. at \$2.00 per T....\$19.00
	9.5 T. at 1.25 per T.... 11.87
14.5 T. Total cost....\$29.00	19.00 T. Total cost....\$30.87

The fuel for burn No. 1 cost \$1.87 less than for burn No.

2. Furthermore, the extra labor requirements for the second burn, and other cost, due to the low quality of fuel, must also be considered.

COST LOWERED BY STEADY GAINS IN TEMPERATURE

Setbacks or losses in temperature, as shown in the time temperature curves in Fig. 4 are frequently occurring, and they represent not only losses in fuel, labor and time, but are harmful to most ware. However, a drop in temperature, as shown by a pyrometer, during the finish period may be caused by admitting air over the fires in order to drive the heat to the bottom of the kiln, or during the oxidation period, when the fires are purposely cut, and a large amount of air is admitted, which tends to hasten the oxidation of the combustion material.

In burn No. 1, Fig. 4, there was no temperature increase during one of the twelve-hour shifts. About three tons of coal were burned. This loss, as well as the fireman's non-productive time, must be paid for.

In the same figure, burn No. 2 shows one slight drop in temperature during the early stages of the burn and a long finishing period. While there were no marked fluctuations in temperature, the long finishing period due to poor firing procedure was costly.

A kiln may look as if it were making the best of progress from all outward appearances, when it actually is not gaining or even may be losing, in temperature. The higher the temperature in a kiln, the greater the losses from radiation, and hot stack gases; and, moreover, the specific heat of the clay increases, slightly, as the temperature increases. These losses are much greater than the majority of clay workers realize. Excessive radiation, thru a kiln crown and walls, can and should be prohibited. Enough fuel must be burned to overcome all losses and to raise the temperature of the ware to its maturing point.

LOADING KILNS TO CAPACITY

One common cause for high fuel consumption per ton of ware is due to the tonnages set per kiln.

A tendency exists on the part of the setters, whether or not held responsible for the proper loading of their kilns, to set the largest possible tonnages per hour on account of piece work or because a certain amount of ware constitutes a shift.

They may be tempted to slight the upper courses of the setting, where the handling (tons per hour) is slower, or may draw away from the lining or crown too much in order to finish as soon as possible so as to make a high wage per hour. On sewer pipe and drain tile yards, the larger ware, which makes the high setting tonnages, often is not stuffed to capacity with smaller pieces, as considerable time and trouble is required and the resulting remuneration, which the setters receive is very small, considering the time spent.

Standard setting schedules have been made by some companies to assure themselves that all kilns will be set to capacity.

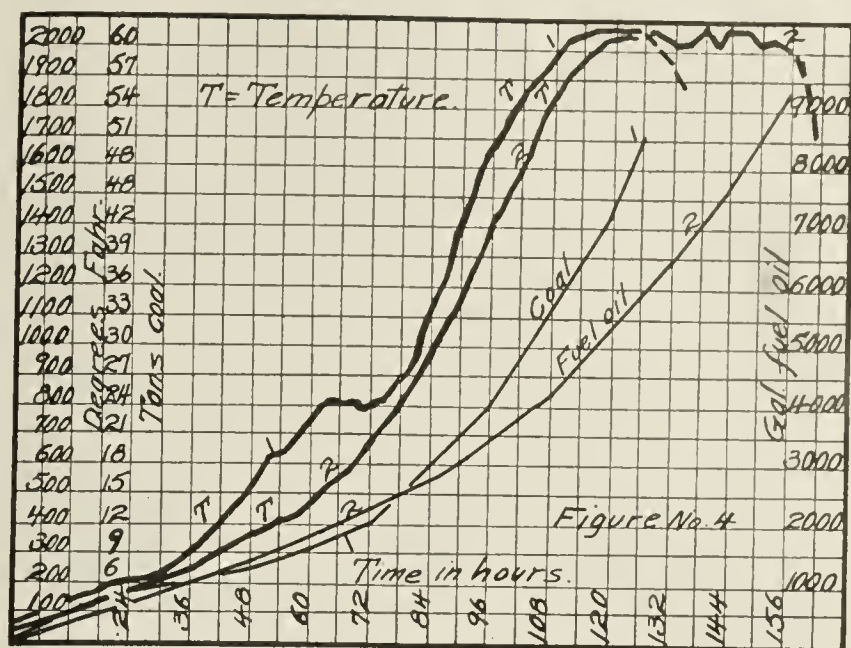
STRIVE TO SET CORRECT AMOUNT IN KILN

Frequently, losses occur from overloading a kiln, and to prevent any further repetition of such trouble the kiln is not properly loaded. The method and height of setting, which produces the best results with the maximum tonnages set per kiln, should be determined by experiment, and then a schedule of amount or tonnage of ware, to be set per kiln, given the head setter or foreman.

Approximately, the same amount of fuel is consumed in burning a kiln containing 180 tons of ware as in burning a kiln set with 200 tons of ware. Assuming that 50 tons of fuel is used for each burn, then the kiln containing the 180 tons of ware consumes .277 tons of coal per ton of ware. The kiln which contains the 200 tons of ware consumes .25

tons of coal per ton of ware. If the coal costs \$3 per ton, then the cost per ton of ware for the two burns would be \$0.833 and \$0.75, a difference of \$0.083 per ton of ware in cost of fuel for burning.

Such losses may seem small, while the plant is running at



Variations of Time Required, Fuel Used and Temperature Reached for Two Burns, Under Conditions Explained in the Text.

capacity from day to day, yet their accumulative total for a year is well worth the effort put forth in preventing or eliminating their reoccurrences.

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Advertisement Contains Worth While Message

It is found advisable for *Brick and Clay Record* to deviate a little from its general policy with regard to referring to advertising pages in its journal. However, in the October 18 issue there appeared an advertisement by the Lancaster (Pa.) Iron Works, Inc., which was entitled, "A Letter of Encouragement to Brick Manufacturers" that was very timely and well written, and is worth the time of every manufacturer who did not read it, to take the opportunity of referring to it at an early moment.

* * *

Building Brick Exports Increase

For eight months ending August 31 last, American manufacturers of all kinds of clay products exported ware to the value of \$4,875,729. For the same length of time during 1920, these same manufacturers shipped to foreign countries wares valued at \$5,223,517, and for a corresponding period in 1919 the export business of the trade was down to \$4,404,059.

This comparative record shows that the peak of the export business was reached in 1920, but that the business for the eight months ending August last shows a decided increase over the export sales for the same period in 1919.

A decided increase is noted in the demand for building brick for export, for during the eight months of 1921 ending in August the sale of this commodity amounted to \$339,399 and for the same term last year the record amounted to a valuation of \$226,519 and for the eight months in 1919 the sales amounted to \$108,925.

* * *

Considerable effort is being made to make this year's American Face Brick Association convention the best ever. Further details and programs will be published in the next issue of *Brick and Clay Record*.

The BUILDING SITUATION

BUILDING OPERATIONS thruout the New England district show signs of increasing activity, particularly in the line of industrial work, with textile and other mills taking a leading part in the revival. Brick is in considerable call for buildings of this latter character. A number of Massachusetts cities show a substantial gain in construction for the month of September, from official records recently compiled, as compared with the corresponding month for 1920, headed by Medford with 907 per cent. increase; Somerville, 522 per cent.; Chelsea, 260 per cent.; Quincy, 219 per cent.; Lynn, 132 per cent. gain, and others in smaller amounts.

The Boston material market is featureless, with prices for the most part holding firm at recently established levels. The New England Brick Co. is offering common sand-struck brick, f. o. b. the job in Greater Boston, at \$17 a thousand, while prices at other dealers vary from \$18 to \$19. This latter figure is being maintained for New York stock, while high grade New England common is priced at \$21. Kiln run, water-struck material is being sold at \$30, with selected varieties of this character quoted at \$32 and \$32.50, delivered.

FACE BRICK PRICE \$40 TO \$50

Face brick is selling at \$40 to \$50 in the Boston market, the latter figure prevailing for rough texture varieties. Fire brick is in fair call at \$60 and \$70 a thousand, delivered, standard boiler No. 1 stock selling for the first noted level. There is no change in sewer pipe quotations.

Terra cotta partition blocks, 4x12 inch, are being retailed at \$140 a thousand in this section, while 8x12 inch material is selling for \$260, delivered. Fire clay is holding at \$25 a ton.

The Boston Society of Architects, Boston Building Trades' Employers' Association and the local Building Trades' Council are cooperating in the developing of plans for improved conditions in the building industry, to bring about a better understanding between architects, builders and workmen. A stimulation of building operations is part of the program.

ACTIVITY AT PROVIDENCE

Greater construction activity is prevailing in the Providence, R. I., district, and while the majority of new operations coming along are of small scope, in the aggregate the volume is bringing an encouraging call for materials at the supply yards.

Common brick is priced at from \$25 to \$30 a thousand, delivered, with popular figures standing at \$27 and \$28. Standard fire brick, No. 1, is selling for \$80 and \$100, with call a little lessened in recent weeks. Fire clay is selling at \$30 a ton, or at \$1.50 a bag. Clay tile partition blocks, 4x12 inch are priced at \$220 a thousand on the job, with 8x12 inch stock bringing around \$375 and \$380.

HOUSE CONSTRUCTION CONTINUES IN NEW YORK

Building operations are being well sustained in the Greater New York district, and the outlook for the balance of the year is very encouraging. In the line of dwelling construction, new high records are being established, and heavy calls have developed for brick and other burned clay products for work of this character. In Brooklyn, the estimated value of housing developments for the year up to the present time are well over \$100,000,000, while the Borough of Queens shows an aggregate of over \$40,000,000, and the Bronx, \$39,000,000.

Heavy activity prevails in the common brick market at New York, with price, under pressure, showing a recession of \$1, or to a level of \$15 wholesale, alongside dock, reverting to the figure that was operative thruout the summer season. Good grade Hudson River stock is procurable at this price, and indications point to its being maintained in the months to come.

The middle of October shows more reserves on hand at New York than for many weeks past, running to about ten cargoes remaining unsold. The arrivals have been heavy, ranging to over 40 cargoes a week from the different Hudson River points. Current and immediate future requirements bid fair to make rapid inroads on existing stocks, and with the seasonal yards nearing the close of their yearly runs, it is likely that early next season will find a depleted situation in the local industry. Local dealers are stocking up well with a vision to the future.

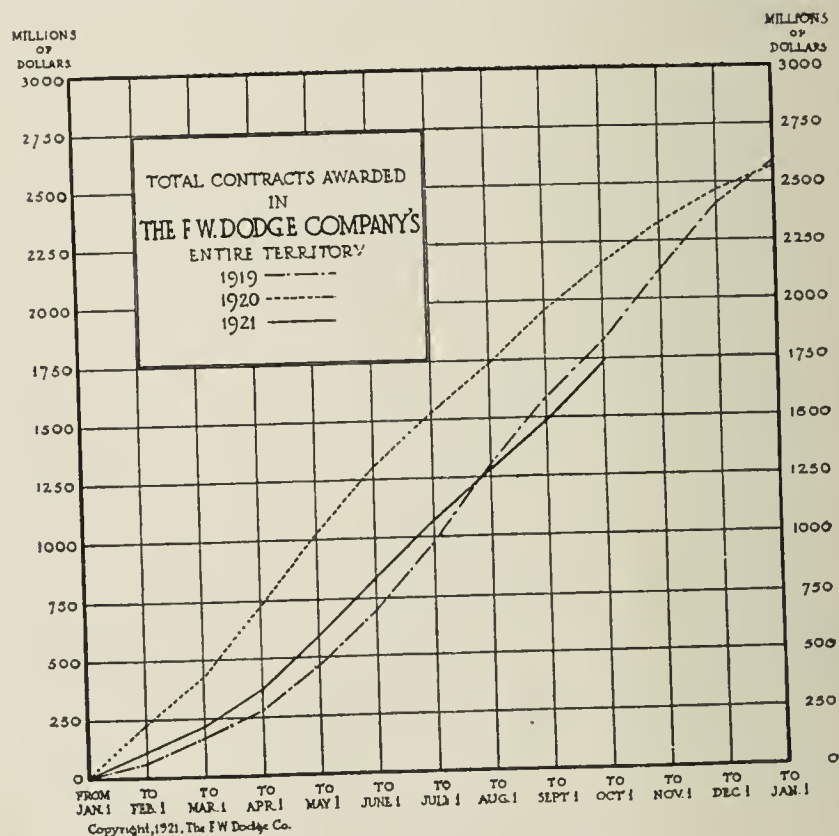
FACE BRICK MARKET IMPROVES

The face brick market at New York shows considerable improvement, and sales are growing in volume. Prices, if anything, are showing a tendency to advance, and it would not be surprising to find a dollar or so added to present quotations at an early date. Red face brick, smooth and rough, holds at \$45 a thousand, delivered; buffs are priced at \$50, and different varieties of gray selections range from \$50 to \$55.

Interior partition tile has been reduced in price during the past fortnight. The small sizes of 2x12x12 inch and 3x12x12 inch are selling at \$120 a thousand, as against a former figure of \$180, while 4x12x12 inch material is quoted at \$170, and 6x12x12 inch at \$190, the latter being a \$90 drop from a previous level of \$280.

NEW JERSEY ADVANCES

The encouraging situation in the building industry, recorded in recent issues of *Brick and Clay Record*, continues in New Jersey, and practically all parts of the state are enjoying good



Curves Showing Total Number of Contracts Awarded in 25 Northeastern States in 1919, 1920, 1921. If Reductions in Building Costs Are Considered 1921 Shows up Very Well.

prosperity in connection with the wave for new dwellings now prevalent in the eastern district. Apartment house construction is leading in the metropolitan sections, with common and face brick in good demand for this work.

At Newark, weekly permits are ranging from \$400,000 to \$500,000, with brick and hollow tile garage construction forming an interesting feature of operations. From 14 to 20 such structures a week are going up in the city.

Prices in New Jersey are holding substantially at present

levels. At Newark, the figure stands at \$20 to \$22, delivered, with a good supply of Hackensack and Hudson River stocks available. Paterson and Passaic are maintaining practically the same levels, while in the Hackensack district, with yards closing down, prices are inclining to \$18 at the kiln.

At Trenton, the figures of \$18 to \$20 remain for good grade common brick on the job, and \$17, the popular price for kiln deliveries. Face brick business is on the increase in this section, and different features of publicity are being used for greater sales.

The fire brick market is holding to a certain uniformity in the different New Jersey districts, with prices varying from \$70, as asked at Newark, to \$75 and \$80 at Trenton. Hollow tile, sewer pipe, drain tile and other burned clay products are in fair demand.

BUILDING GROWS AT PHILADELPHIA

The revival in building construction continues at Philadelphia, Pa., and dwelling work is reaching an encouraging point. The entire year of 1920 produced a record of 1,296 houses, or 166 less than the first nine months of the present year. It is estimated that 1921 will round out a figure of about 1,600 new dwellings, and the big majority of two-story, brick type. Garage construction is also reaching substantial totals, and up to the present time permits for over 1,200 such structures have been issued by the local building department. It is expected that work of this kind will show an investment of over \$3,000,000 for the year, or more than \$1,000,000 in excess of the total of 1920.

A fairly good demand prevails for common brick at Philadelphia, and recent weeks have brought a noticeably increased call for material for early delivery. The price remains at \$20 a thousand for first grade material, and no immediate change is anticipated. Face brick is showing an inclination to move better, and larger orders are being booked by the different local representatives of manufacturers, with prices varying from \$45 to \$55, according to stock. Rough texture material is the favorite. Fire brick is being quoted at \$75 a thousand generally in this section, with fair call at the present time.

ENCOURAGING SITUATION AT WILMINGTON

The building situation is showing a gratifying growth at Wilmington, Del., and a number of good sized projects are now under way, with considerable housing work. Bricklayers are helping the cause by agreeing to a reduction in wages, a new scale being established at \$8 a day as against \$9, heretofore, and \$10 a little over a year ago.

Common brick is selling at \$22 a thousand delivered, under a fair demand. Face brick is around \$45 and \$50, and fire brick holds at \$70 and \$75.

A new city ordinance is now operative imposing a tax on different industries and businesses operating in the city. Brick and tile dealers are taxed \$25 a year; architects, \$25; contractors, \$25; and other subsidiary building lines from \$10 to \$15. A license is being issued by the city permitting operation after payment of the fee.

MANY NEW BRICK DWELLINGS AT BALTIMORE

Brick dwellings are taking the lead in new construction at Baltimore, Md., and blocks of a number of such structures, the majority two-story, are now under way. These operations are making for a good call for brick and other burned clay products, while other projects, notably a new two-story Colonial brick dormitory at the Hopkins University, are helping the demand.

The local material market is moving without any noticeable feature of change. Common brick is maintaining at a \$21 level, with salmon varieties from \$2 to \$3 lower. Face brick is priced at \$43 upwards, according to selection, with fire brick ranging at \$70 and \$75. Refractory shapes and other kindred

burned clay products are in fair demand by the Baltimore industries.

PITTSBURGH OPERATIONS ENCOURAGING

Evidences of the continuation of the revival in building in Pittsburgh, Pa., are still apparent. During the past two weeks 218 applications for permits to build have been filed with the city bureau of building inspection. The projects are to cost \$1,779,379, a decided increase over the previous two weeks. Applications for dwellings predominate in the last and a majority of these are for houses of brick, brick veneer, brick and stucco or brick and shingle construction.

Among the recently announced projects is a \$1,000,000 modern apartment house for which plans have been announced, ground purchased and financing arranged. The building will have stone facing on the ground floor, with light brick and stone trimmings above. It will be eight stories high, will contain 86 apartments, and will be "U" shaped, having a front of 160 feet and a depth of 100 feet.

The board of education of the city of Pittsburgh, Pa., has decided to resume in its entirety the building program practically left at a standstill since the beginning of the war. An amount close to \$10,000,000 to be raised by a bond issue, will be necessary to carry out the original program with such additions as have been made necessary by the lapse of time.

CLEVELAND BUILDING MANY SCHOOLS

There is no complaint as to the amount of work at hand and in prospect for the construction industry in Cleveland, Ohio, altho it must be admitted that the bulk of this is in public building, and the majority of the buildings are schools. Yet the city of Cleveland is entering upon the biggest school building program in its history, a total of 21 schools, at a cost of \$15,000,000, having been started or will be next year. It is estimated by F. W. Lear, of the school architectural department that the city is ten years behind in its school building program. Even with the completion of the present program it is believed the city will be but half way caught up with its needs, at the present growing rate of the community. Already half the number of schools mentioned have been contracted for and started or soon will be started.

Brick, tile and other clay products building materials have remained stationary here during the period, and prices appear to have reached bottom. The same applies to prices on other materials, with a few exceptions in the minor items, which last have been lowered only slightly since the first of October.

THE COLUMBUS SITUATION

Considerable school building work will be up during the winter months in Columbus and Central Ohio. In Columbus alone plans are being made for four high school buildings, and the board of education is expected to award the contracts during the winter months in order to permit construction work to start early in the spring. Each of these buildings will run to \$1,000,000 and one will mean an expenditure of even more. Prices of face brick in Columbus and central Ohio territory are holding fairly firm. Face brick range from \$23 to \$35 f. o. b. cars, while common brick sell for about \$15 delivered on the job. Common brick after a rather rapid decline have apparently reached the bottom for the time being and are holding firm.

BANKERS TO AID CHICAGO BUILDERS

One of the bright features of the building situation in Chicago is the announcement made recently that bankers are considering plans to extend financial help to builders. With the opening up of credits it is hoped that building will take a decided step forward.

Building permits are averaging between 25 and 35 per day.

the great majority of which are for small houses, apartments and some garages. Several large apartments of the \$200,000 class have been projected within the last two weeks.

Common and face brick are moving at a fair pace. Commons are in greater demand immediately outside of the city than on projects inside. Some face brick dealers and manufacturers' representatives are securing orders for face brick in large quantities.

Regarding the labor situation, things are practically unchanged. The plumbers have agreed to go to work pending a rehearing of the Landis decision, while the carpenters, sheet metal workers, painters, plasterers, lathers, and others who were not a party to the agreement are still holding out for the old rates. Prominent authorities are of the opinion that these trades will ultimately come back at the new wage scale.

The Twin Cities district building activity continues fairly active. Several large buildings are contemplated among which are a store and office building in Minneapolis amounting to \$200,000 and a school building at St. Paul to cost \$350,000.

IN LOUISVILLE

Demand for clay products is slowing up just a little in Louisville, Ky., as a result of the late season, and the fact that not as much work is being started, or will be started until spring. However, some of the local plants report very fair deliveries, and good prospects. Common brick have not been quite so active this year due to lack of commercial or factory building, and the fact that concrete foundations have displaced brick foundations. However, residence construction has taken large quantities of face brick and common brick. Hollow tile has been in very good demand, and sewer pipe has been fair. Drain tile is improving a little.

BIG ACTIVITY AT ATLANTA

Atlanta, Ga., is due for more than passing mention with regard to current building operations, for all records for house construction are being broken dating back to 1910. Up to the present time, permits for about 1,100 new dwellings have been taken out in this city.

Building in Nashville, Tenn., during the last three months has broken records for the same time in previous years. In Memphis a considerable amount of home building is going forward and prospects are that work will not cease during the winter months. A club building is to be erected in that city to cost \$500,000.

Birmingham, Ala., during the past 12 months built 1,241 houses, more than treble the amount of the previous year. A large project at Jackson, Miss., is a group of sanatorium buildings to cost in excess of \$500,000.

CALIFORNIA TO HAVE LARGE WINTER PROGRAM

In meeting the problem of unemployment California is much more fortunate than many other states of the Union because the mildness of the climate even in sections north of the bay district permits building operations to proceed thruout the winter. The State Board of Control announced recently that a construction program amounting to \$6,000,000 for public works during the coming winter and spring will provide work for about 50,000 men. When the program is approved by Governor Stephens it will be the largest schedule of its kind inaugurated within recent years. The department of public works expects to expend more than one million dollars alone in wages. One of the most extensive undertakings will be the construction of the capitol annex at a cost of \$3,000,000. This work will be started about January 1. More than 30 other major buildings will be constructed under the program, and this work will commence in December. The buildings will consist of hospitals, dormitories, school buildings, laboratories and offices for various state institutions.

LOS ANGELES ACTIVITY

When building permits total \$400,000 a day, it is safe to

predict that this October of the year 1921 is the biggest building month ever known in Los Angeles. It is estimated in the building department that the entire permits will run over \$9,000,000, a gain of \$1,000,000 over September's record, which was the highest known here. No large permits have been issued as yet, altho there are applications now in the hands of the department for a number of buildings to exceed \$500,000 and up.

Building operations at Walnut Park, a suburb of Los Angeles, aggregate about \$264,000 in commercial buildings and homes, according to Victor Girard, subdivider of Walnut Park and West Adams Place. Sales of houses already constructed reached the sum of \$157,275.

* * *

Elimination of Waste in Building

At a recent meeting of the council of the Associated Building Trades of Philadelphia, Colonel Sanford E. Thompson, of Thompson-Lichtner Co., Industrial Engineers of Boston, made a fine address on the movement which has been started by Herbert Hoover as president of the Federated Engineering Societies in order to eliminate all possible wastes in the building industry.

"Three wastes stand out sharply in the building trades," said Colonel Sanford in part:

"1. Loss of working time thruout the year.

"2. Poor planning of construction work, and of the individual jobs by the builder.

"3. Lack of knowledge of a day's work.

"A man's earnings are not what he earns in a day, but what he earns in a year. We must eat while idle; we must sleep in our house whether we work or not; we must wear clothes, and, in fact, better clothes, when we loaf.

"But—and this the pinch—a man must earn what he is paid for. How easy it would be if we could pass a law that every man on this continent should receive a salary of not less than \$3,000 a year. It can't be done until each man earns his salary of \$3,000 per year. We can't draw without putting it in."

Later in the same address Colonel Sanford spoke of the indirect effects of waste and of the results of waste in the long run. We quote the words exactly with the hope that anyone who is tempted to consider a small amount of waste as a little thing will realize that it has far reaching consequences:

"Under present building conditions there is an irregularity of work thruout the year, often a poor planning of the work, and also a lack of knowledge of what is a fair day's work. There is but one way to solve the problem. It is to eliminate the waste of time, of energy and of material. If a builder fails to plan his work and his men are idle, it may not cost him any more on that particular job, but it means the workman eventually must be paid more per day to balance his loafing time. The cost of building is increased and fewer people can build. If a bricklayer loafs on his job and restricts his production, it will not affect his pay at the end of that particular day, but it is wasted time."

* * *

Glen-Gery Buys More Land

Glen-Gery Shale Brick Co., of Reading, Pa., has recently acquired 20 acres of land in Wyomissing from the Reading Iron Co. for a consideration of \$25,000, a report states. It is stated that the company will erect additional factories to increase the manufacture of face brick. Material on the new site will be used for making a Venetian red brick, for which there is a great demand in the New England states.

FINE CERAMIC MANUFACTURE

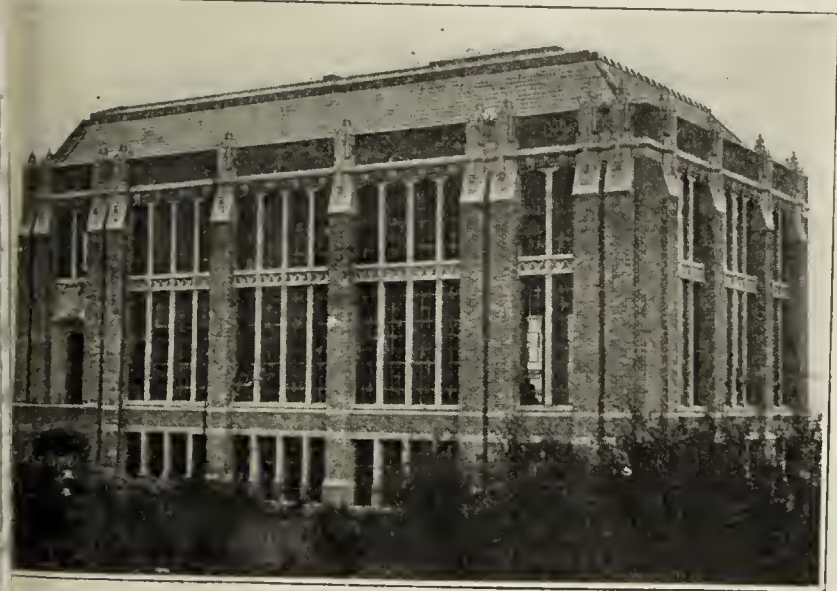


A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

NEW CERAMIC EXPERIMENT STATION



CERAMIC RESEARCH and studies on coal-washing are the two problems which will receive special attention at the new mining laboratory, recently completed on the University of Washington campus and dedicated during the visit there of Dr. H. Foster Bain, director of the United States Bureau of Mines. Announcement of the establishment of the new ceramic station was made in the previous issue of *Brick and Clay Record*. The new building, of steel frame construction, is the fourth of the university's buildings to be devoted solely to mining and is the seventh completed unit of the building program inaugurated by the university in 1916. "The ceramic industry in Washington has not been developed to a very great extent," Clyde E. Williams, superintendent



Beautiful New Building Housing the University of Washington's Ceramics and Fuel Laboratory.

of the Federal Bureau of Mines Northwest experiment station, said at the inauguration, "but representative clays are sent in sufficient form and the Northwest can supply all the materials necessary to establish a ceramics industry capable of supplying the demand here for clay products. The ceramic laboratory occupies two-fifths of this splendid building and when all the equipment has been installed, facilities for ceramic research may be considered second to none. Professor Hewitt Wilson, a graduate of Ohio State Uni-

versity, is directly in charge, and deserves considerable credit for his untiring effort and careful foresight in the planning and arranging of details of the new laboratory.

TO DO ALL KINDS OF CERAMIC TESTING WORK

The new building is 60 feet wide and 80 feet long and approximately 53 feet high above the ground. The coal work occupies 48 feet of the length and the ceramics work 32 feet. The coal-washing laboratories are being equipped to handle efficiently any quantity of coal up to a carload lot and only



Distinguished Guests at the Dedication of the New Ceramics Laboratory at Spokane, Wash. From Left to Right, D. F. Buckingham, Representing State Coal Operators; Dean Milnor Roberts of the College of Mines; Mrs. Ruth Karr McKee and Dr. H. Foster Bain, Director of the U. S. Bureau of Mines, Who Was the Principal Speaker.

the most efficient experimental equipment is being installed.

The equipment of the ceramics portion will make it possible to do virtually all the testing work for structural wares, refractories, pottery, enameled metals, abrasives, cements, limes and plasters and thermal insulators.

The Washington State Geological Survey has collected samples of clay and studied the geology of the deposits, while the ceramic department of the School of Mines of the University of Washington has tested 274 clays according to the standard methods of testing of the American Ceramic Society. It is expected that a bulletin covering detailed description of the testing work and a general summary of methods of testing and the physical and chemical properties of clays will be completed very shortly.

WASHINGTON HAS EVERY TYPE OF CLAY

Almost every variety of clay was found in the state. Residual kaolin-like clays from the Spokane district; buff-burning plastic, lacustrine clays from the same district; Eocene shales from Western Washington; Pleistocene red-burning clays from Southwestern Washington; glacial clays from the Puget

Sound area; basaltic clays from Southwestern and Eastern Washington; refractory clays from the Sumas, Green River, Napavine and Spokane districts. Terra cotta, stoneware, and buff-burning pottery clays from the Green River and Spokane districts. All varieties of red-burning structural wares can be made from the shales, glacial, pleistocene and basaltic clays.

This clay survey is the first of a series of reports on the available ceramic resources of the Pacific Northwest.

The new laboratories were designed jointly by the staff of the School of Mines and officials of the Bureau of Mines and will be used jointly by the School of Mines and the Northwest experiment station of the Bureau of Mines under a co-operative agreement. The cost of the building was \$125,000, of which sum \$50,000 was devoted to the ceramics portion of the laboratories.



Foreign Pottery Shows Art Skill in Design

That the rare art of making fine porcelains and potteries, which was practically suspended in Europe during the war, has been revived, is indicated by products recently received at the Bush Terminal Sales Building in New York from Denmark, Switzerland, Spain, Holland, France and Italy, and exhibited to the trade by more than a half dozen importers.

The Swiss potteries shown give the effect of mosaics of color, and like the Danish potteries are of lighter hues than those from Southern Europe. Many of them have brilliant colors in floral designs, applied on a white background and with a highly-glazed finish. One jar has a blue background adorned with yellow and white flowers, which have black and green stems, the inside being brick red.

Hollanders have lost none of their kiln craftsmanship. Candlesticks, soap dishes, vases, flower pots and stands for cut flowers are shown. In a range of fruit bowls the hand-painted colors are baked into the pottery. Pottery salt and pepper shakers are among the late novelties. They are designed in lavender, black, light blue and black, with colored flowers.

The new Czechoslovak potteries show the intense passion for color of that mid-European people. Some of the salt-cellars are as brilliant as a rainbow. The odd teapots, broad and squat, are trimmed in bright red. Inset panels on either side show floral effects of red and green. In some of the pieces the Czechoslovakia technique closely resembles the intricate design of the French. The inside of one jar is of deepest blue, and the exterior is white with blue and gold medallions.

Spanish porcelains also have an exquisite finish, altho the colors are more subdued. A flagon has a pale yellow background, with small patterns in black, red, blue and brown. The effect suggests burned wood.



Potteries Showing Revival on Healthy Basis

Operation of potteries in the East Liverpool district continue on schedules of production upward of from 75 to 80 per cent. of capacity. There are only one or two potteries in the eastern Ohio territory not working on "war schedules," and these are the Hall China Co., and the Potters Co-Operative Co. These firms have two separate plants, but both are operating one of their plants about full time.

The present is the buying season for fall and holiday merchandise, and of course the retail trade and jobbers are anxious to have sufficient stocks in hand to meet all requirements of their trade.

One of the most pleasing events of the last fortnight was the action of the Knowles, Taylor & Knowles Co. starting work full time in all departments.

In all pottery offices the general report is that orders are showing an increase over September, and from the coöperation

shops the reports come that a greater demand for packages prevail than at any time this year. In the latter instance, however, coopers are now compelled to pay more for heading lumber than heretofore, an advance of from \$2 to \$3 per thousand feet being quoted over the former market. However, the "war market" has not been touched. But, in face of this rising lumber market, the pottery manufacturers have been granted several reductions in the price of packages during the year.

The mail order house buyers are specifying larger volume than has been their custom of late, while some of the Pacific Coast jobbers are very liberal with their specifications.

It is the general opinion of the generalware manufacturers that the spring of 1922 will witness a boom in the trade such as has never before been experienced. The settlement of the tariff question will go a long way toward aiding the domestic pottery industry, and should the American Valuation plan be adopted, the thousands of American pottery workers will be favored with employment which is bound to insure steady operation of all plants.

Just at the present time there is no boom in demand for general ware. Buyers are not "running wild," as they did during 1919 and the early part of 1920. They are, however, ordering requirements in a conservative manner. The growth in the receipt of new business is steady, and, it is considered healthy.

Distributors of raw materials, such as flint and spar are encouraged over the outlook. These people say that manufacturers are proving steady customers, and are indicating that while they do not desire to overload their bins, they insist that normal stocks be available at all times.

In all generalware potteries, new lines for 1922 are being arranged. There will be few, if any, new shapes shown, other than those which have been brought out this year. However, practically every pottery will have a number of new decorations to show the trade, both in border patterns and spray. The latest shape to be shown, however, is that by the Carwright Bros. Pottery Co., which has been named the "Harvest." This is a fancy shape, and quite a number of exclusive decorations have been planned for this offering.

Taking the generalware situation as a whole, the trade line shows a decided upward tendency. The black cloud has passed beyond the horizon.



San Francisco Porcelain Plants Busy

The porcelain and vitreous china plants of the Pacific Porcelain Ware Co. and the Pacific Sanitary Co., of San Francisco, Calif., are running their factories in Richmond 24 hours a day. For some time past the plants had been working on a basis of four days a week, but orders have been increasing to such an extent that every man in the line of trade is now on full time. Altho building in the San Francisco bay region can scarcely be said to be up to normal, particularly in dwelling houses and flats, activity since the building strike have been resumed to a great extent.



Use Compartment Kiln for China Burning

The large amalgamation of Cauldon Potteries, Ltd., of Stoke-on-Trent, England, which includes Brown-Westhead, Meakin & Co.; George L. Ashworth & Bros.; J. A. Robinson & Sons; the Grindley Hotel Ware Co.; Ford & Pointon; F. & R. P. & Co.; the Alcock Pottery and Arkinstall & Son are all to build Shaw gas ovens for china ware. This is in addition to the one they have already in use for earthenware. Cuthbert Bailey, who is chairman of the committee appointed by the English Pottery Federation to examine and report

all gas kilns, and whose investigations have been going on for several years, is a director of the Cauldon Potteries. The name of Cauldon is well known in American circles as producers of the finest china.

The Shaw gas ovens are composed of chambers. They have been highly successful in sanitary ware and earthenware. To adapt them to china has great significance.

* * *

Ohio U. Adds Seven to Ceramic Staff

Seven new members have been added to the staff of the ceramics experiment station of the Ohio State University to carry on investigations for the bureau of mines and for the clay industries of the Buckeye State. They are: Dr. L. I. Shaw, assistant chief chemist; G. A. Bole, physical chemist, who for eight years was head of the department of chemistry of the New York School of Ceramics; Paul Bachman, Robert Zehm, E. J. Baker, R. B. Gilmore and A. H. Fessler. All of the last named are ceramic engineers. Students in the department of ceramic engineering will be allowed this school year to work under the direction of government scientists in the preparation of their theses.

* * *

East Liverpool Plants Running 75 Per Cent.

Altho some plants in the East Liverpool, Ohio, district are running at capacity, the average basis is about 75 per cent. These schedules show more activity than at any other time during the year. A new pottery has been placed in operation at Scio, Ohio. Sales of hotel and restaurant ware are satisfactory. The demand for plain whiteware has improved.

* * *

The Frontenac Floor & Wall Tile Co., Kingston, Ont., is erecting a large grinding plant.

* * *

O. H. Hehr Accepts Job With Elsinore Pottery

O. H. Hehr, an expert potter of Sacramento, Cal., has accepted a position with the Elsinore (Cal.) Pottery Co. Mr. Hehr was associated with the San Jose Pottery Co. about 14 years and was instrumental in the upbuilding of the company. John P. Millar, manager of the Elsinore works, feels that he is fortunate in securing the service of Mr. Hehr. Stoneware crocks, bowls and jugs are among the current products of the Elsinore plant.

* * *

Outlook for Stoneware Men Bright

K. P. Snyder, of the Louisville (Ky.) Pottery Co., was in Chicago for a few days on business. The company reports that while there is some little demand for stoneware, it is rather quiet, and that with consumers anticipating lower prices there has not been much inclination on the part of florists to buy. However, the florists are having a good season, and one in which coal is much cheaper than it was last year, with the result that more stuff will be grown, and spring outlook is more promising.

* * *

Chemical Plant Locates at Cleveland

A new fluorspar plant for Cleveland, Ohio, has been established with the acquisition of the Meech Foundry Co.'s plant in that city by the Mount Eagle Feldspar Co., of Canada. The Mount Eagle company operates extensive mining properties in northern Canada, where the fluorspar is ob-

tained. These mines are said to have a daily output of 100 tons or more. The material will be shipped to Cleveland, ground, treated and distributed to pottery producers. The production of a by-product, porcelain parts, particularly those used in the electrical industry, also is contemplated.

The company is incorporated for \$1,000,000. The Cleveland plant is expected to start operation about November 1. J. O. Brown is president; M. B. Gordon, vice-president; and C. C. Burkett, secretary-treasurer.

* * *

Pennsylvania Concern Organizes to Make China

Two additional members were added to the board of directors at a meeting of the board of the Pittsburgh American China Co., in Greensburg, Pa., late last month. The organization as it now stands is: President, W. S. Lane; vice-president, J. A. Sheetz; secretary, M. S. Schweiker; treasurer, B. W. Kerr; other directors, Worth Kilpatrick, of Connellsville; F. A. Maddas, of Jeannette; C. C. Hileman, of Greensburg; A. F. Humphreys and George B. Taylor, of Greensburg. Production in the new china factory has started and at present is being confined to enameled bathroom tiles.

* * *

Pottery and Chinaware Plant Contemplated

The McNichol Pottery & Crockery Co., Memphis, Tenn., is planning for the establishment of a new local plant for the manufacture of pottery and chinaware products, estimated to cost in excess of \$150,000 with machinery. J. M. Goff is representative.

* * *

Operating on Normal Basis

The Canonsburg (Pa.) Pottery Co., Meadow Lane, is operating its plant at normal capacity for the manufacture of pottery specialties and terra cotta products. The W. S. George Pottery Co., with plant in the same city, is also producing its regular output.

* * *

Canadian Company Organizes

Ontario Potteries, Ltd., Bowmanville, have been incorporated with a capital of \$100,000 by A. Hircock and T. Basinger, brick manufacturers, and T. W. Black, T. S. Holgate, and W. Tapson, all of Bowmanville, Ont., to manufacture brick, tile, pottery, etc.

* * *

Potters Will Convene at Washington

The Executive Committee of the United States Potters' Association has voted to hold the annual convention of the organization at Washington, D. C., during the week of December 5-10, with a three day session.

* * *

F. F. Echols Killed in Auto Accident

Announcement has been made of the death of Frank F. Echols, assistant general manager of Stevens Brothers & Co., Stevens Pottery, Ga. Mr. Echols met an untimely death in an automobile accident on October 16 at Macon, Ga. He was the son of A. B. Echols, who is vice-president of Stevens Brothers & Co.

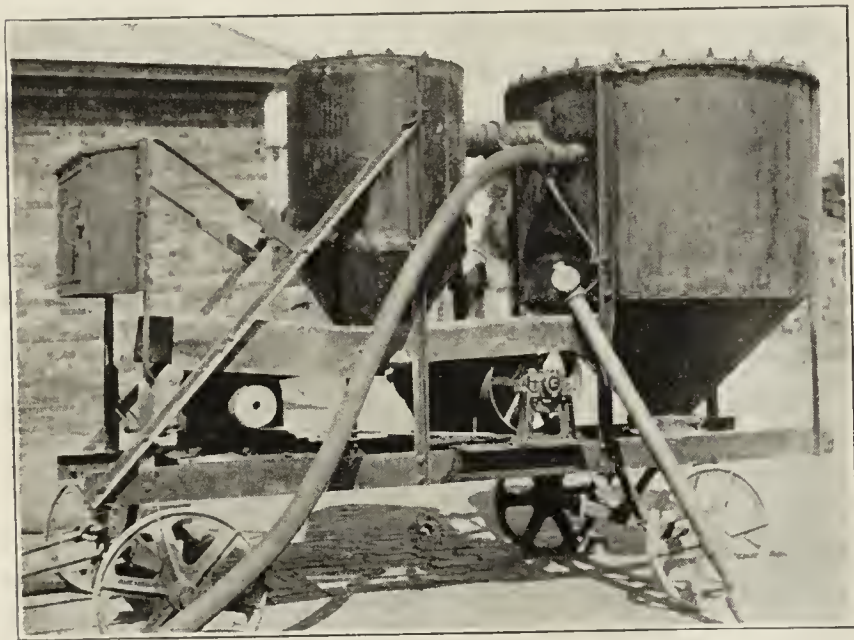
The SUPERINTENDENT

Helpful Hints for Practical Men
Whose Problem is Maximum
Production With Minimum Cost

Cleaning Kiln Flues With Vacuum Cleaner

Almost five years ago—to be exact—in the November 7, 1916, issue—there was published in *Brick and Clay Record* an article entitled "From Togo to Togo." The article was written in a humorous way and used to "spring" a new idea for a method of cleaning kiln bottoms thru the use of a vacuum cleaner apparatus. Investigation and experiments were conducted by some manufacturers to build a machine that would remove the sand and broken bits of clay from kiln flues after each burn. However, as far as we know, these experiments all proved a failure.

E. F. Plumb, then vice-president of the Streator (Ill.)

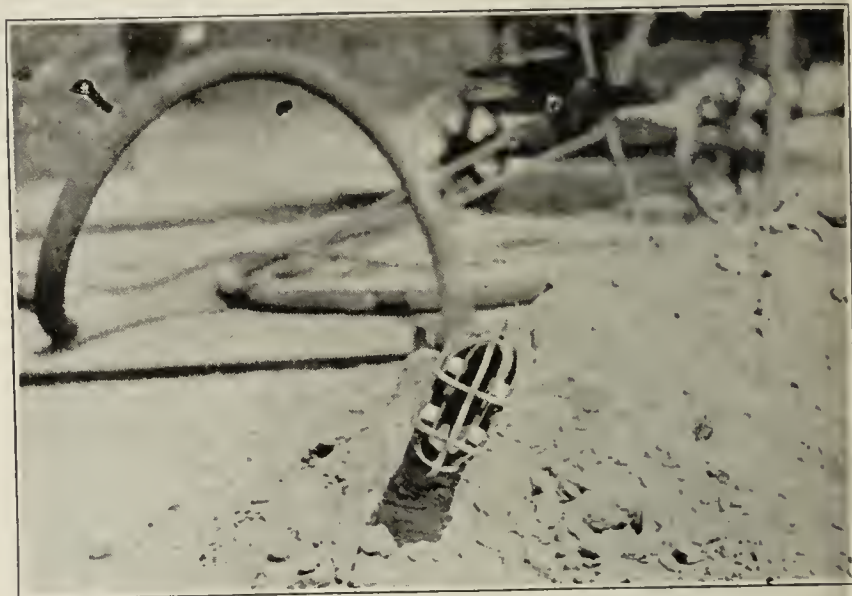


The "Vacuum Cleaner" Built by the Streator Brick Co., to Clean Kiln Flues of Sand and Brick Chips.

Brick Co., but now president, read the article and was impressed with the practicalness of the suggestion. He wrote at that time: "Referring to the question of vacuum cleaner

for removing the sand from the bottom of the kilns. While this was suggested in a humorous article in your publication, we believe that there is a great deal of merit in the idea.

"You state that the objection to this device is the wearing



Showing the Peculiar Construction of the Streator Brick Co.'s Kiln Flue Vacuum Cleaner Hose.

of the hose due to the friction of the sand. We know that a sand blast hose is manufactured for the purpose of sand blasting, and we do not see why this would not operate equally satisfactorily on this kind of mechanism. If such a device could be developed, we know that we for one would hail it with delight and believe the manufacturers may have given up this proposition too easily."

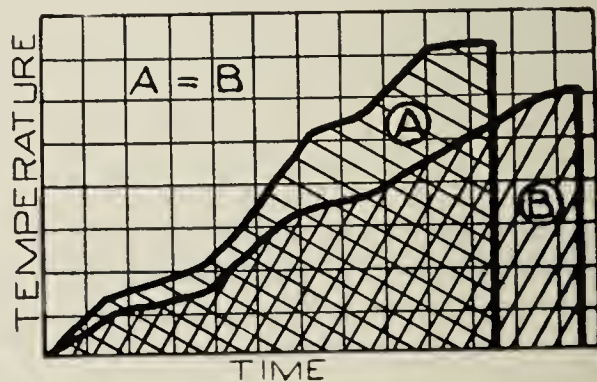
Recently, the perfection of a kiln flue cleaner has been accomplished. Furthermore, the credit for the development of such a machine belongs to Mr. Plumb whose foresight and perseverance made the equipment possible. Mr. Plumb is a great believer in the possibility of improving present clay manu-

Areas Under Time-Temperature Curve of Any Clay, Equal

If we take a certain clay and plot time-temperature curves for burning it at different speeds and temperatures, we will find upon measuring the areas beneath the various curves, that they are equal in each case for slow and fast burning, and for high and low temperature maturing or finish temperatures. The area under the curve is the time-temperature treatment required by that particular clay or body to burn it properly.

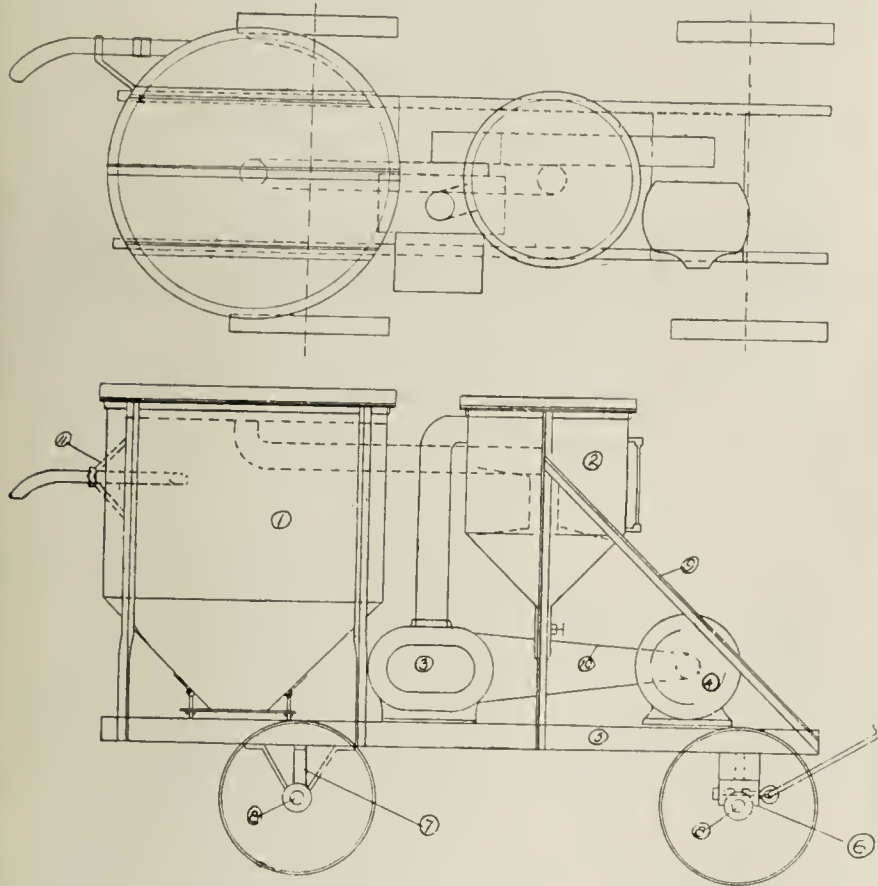
The effect of the time-temperature relations should be studied for every clay, since only when reliable information concerning this subject is at hand, is it possible to exercise complete control of the burning. The importance of such results applied in factory practice cannot be emphasized too much.

The use of pyrometers in plant operation, is to be urged most strongly, as they afford the only means of controlling the rate of firing. In the discussions that have appeared in this department, it is apparent, that cones, settle measurements, and pyrometers, each serve a different purpose in guiding the burning of clay ware. The time-temperature factor in burning can only be regulated with a pyrometer. For the establishment of the end point of the burn, pyrometric cones, shrinkage and porosity determinations are of value.



facturing processes so that more machinery can be used to supplant the work by manual labor and incidentally cut production costs at the same time.

To carry out the ideas he has in mind, and to develop this work, Mr. Plumb has associated with him a mechanical engineer, D. B. Ogden. Mr. Ogden is a mechanical genius and has a knack of working out complicated mechanical problems. It was Mr. Ogden who carried on the research on the sand sucking machine and finally developed it to a state where it is entirely practical.



Drawing of the Flue Cleaning Device Showing Side and Top View.

The device operates on the principle of a vacuum cleaner and consists of two drums in which a partial vacuum is created by means of a 5 H. P. motor driving a suction fan at the rate of 1,200 r.p.m. The drum to which the fan is connected and operates on primarily, has a burlap cylinder inside, which aids in catching the dust and preventing it entering the fan or interfering with its operation. This drum is connected by a pipe to another larger steel drum, the bottom of which is partially filled with water. The water serves to collect the dust and sand and clarifies the air.

The motor is operated by simply attaching the cord to the nearest light socket. A 50 foot two inch diameter hose is used between the machine and nozzle. The velocity of the air passing thru the hose is from 6,000 to 7,000 feet per minute. A vacuum close to one pound per square inch is obtainable. A special nozzle is required. This is made according to the style shown in the photograph. The choice of a proper nozzle is essential and the main point in the successful operation of the apparatus.

The nozzle is inserted thru the kiln floor holes into the feather flues, which in the Streater Brick Co.'s kilns are 3½ feet deep and the machine then operated. In most cases it takes but eight hours to clean out the entire flue altho it has been done in as short a time as five hours.

The apparatus picks up pieces of clay as large as one inch cubes and gathers sand and debris at the rate of 561 pounds per hour. Only one operator is employed and he simply transfers the nozzles from place to place and his attention is required only part of the time, enabling him to do other duties.

The approximate cost of the machine is \$500 and can be made at the shops of most clay plants that are near enough to large centers where the special parts can be purchased Mr.

BRISTOL'S RECORDING PYROMETER



tells the workman at a glance just what the temperature conditions are now, what they have been, and in what direction they are leading. With this knowledge he can readily obtain close regulation—and even inexperienced workmen can do better work.

Get copy of Bulletin
AE-291

THE BRISTOL COMPANY - Waterbury, Conn.

Why Use Coal For Fuel?

Write for catalogue.
Established 1905



It is expensive besides taking longer to burn your ware, and considerable more labor.

USE OIL

The Schurs Kiln Burners in your kilns mean—Quick Burns, Better Colors, complete control of fire and

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Gruendler Crushers and Pulverizers are built simple in design and rugged in construction, all parts easily accessible—built in eight different sizes. Write us for interesting bulletin.

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Complete Power Transmission
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(Patented)

FIRE BRICK

FOR KILNS

RIGHT QUALITY

Write us and we will tell you
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The Evans Builders Co.

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Cincinnati, Ohio

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UNLOADING FOR 3 CENTS PER TON



Elevating and conveying equipment.
Steel and malleable buckets furnished in all sizes and shapes.
Chain, sprockets, etc.

Let us quote you on your requirements.
The Columbus Conveyor Co., Columbus, O.

PULSOMETER STEAM PUMP



Will keep your pit free from water. Pumps continuously without attention or adjusting. Handles any fluid up to 40% solid when agitated and is particularly suited to Clay Plant needs.

NEEDS NO LUBRICATION!
Ask us for proof of performance

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Executive Offices, 224 W. 42nd St., New York, N. Y.
Distributors in all principal cities

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OUR FACTORY
THE LARGEST
IN THE WORLD
DEVOTED TO
CAR BUILDING
ALONE
CARS
FOR
EVERY MINING
AND
INDUSTRIAL
PURPOSE
CATALOGS ON
REQUEST
THE
WATT MINING
CAR WHEEL
CO.
BARNESVILLE OHIO

Ogden has given *Brick and Clay Record* permission to portray the drawings used for assembling this machine and they are for the use of any of our readers who care to use this splendid data.

Parts List

Part No.	No. Required	Name
1	1	Dry Separator
2	1	Wet
3	1	Roots Blower Acme 4½A
4	1	Motor 5 H. P. 1,200 R. P. M.
5	2	Frame Channels
6	1	Front Axle Mounting
7	1	Rear
8	2	Axle with Wheels
9	2	Diagonal Brace
10	1	Belt
11	1	Inlet Hose Bracket
12	1	Inlet Hose 50'—2" I. D.

The LETTER BOX

A Place Wherein Letters
That Have General Interest
Are Published and
Commented Upon

Figuring in Percentages Is Dangerous

Reprinted below is a letter which was received by *Brick and Clay Record* recently from G. W. Greenwood, treasurer, United Refractories Co., Uniontown, Pa. Mr. Greenwood differs with W. F. Godejohn and his method of figuring in the article "Payment of Bonus to Pipe Press Crews," recently printed in this paper. In the last issue of this publication was published a discussion of Mr. Godejohn's article by J. B. Bain of Washington, D. C., and Mr. Godejohn.

Mr. Greenwood is a firm believer in cost records and accounting and has himself written many articles on the subject for this magazine. In his letter to the editor he says:

"Accounting will remain in the background until the coming method of expressing all inefficiency, waste of time, or materials, in terms of a common unit, becomes generally known and used. At present the unit being used is the dollar, but Mr. Hoover's committee is looking about for a more stable, uniform base." The following are Mr. Greenwood's arguments regarding the article "Payment of Bonus to Pipe Press Crews":

Assuming that the standard output for a press crew of 13 men is 702 six-inch pipe per hour, what is the efficiency of a crew of 15 men who only put out 675 per hour?

This is a brief statement of a problem discussed in the Letter Box of *Brick and Clay Record* for October 18, 1921. The solution offered by the proposer of the problem is as follows:

	Standard	Actual	Efficiency
Output of six-inch pipe.....	702	675	96.6%
Number of men required.....	13	15	86.6%

From this is obtained an average efficiency of 91.3 per cent. by adding the two percentages of efficiency and dividing by two.

The first percentage is obtained by dividing the actual by the standard, and the second by reversing the process and dividing the standard by the actual. There appear to be some slips in the computations, since the percentages appear to be 96.15, 86.67, and the average 91.41.

But in any event it is rather difficult to justify these two reverse methods of figuring efficiency on a combined operation.

However, let us apply the system to a couple of hypothetical examples and see how it works out. Consider the following:

	Standard	Actual	Efficiency
Output of six-inch pipe.....	500	1,000	200%
Number of men required.....	10	20	50%

From which we would obtain by the method cited, an average of 125 per cent. This does not appear reasonable, since there

should be neither an increase nor a decrease in efficiency if doubling the crew also doubles the output. Let us therefore try again, as follows:

	Standard	Actual	Efficiency
Output of six-inch pipe.....	500	200	40%
Number of men required.....	10	5	200%

We now obtain an average efficiency of 120 per cent. But we find half as many men doing considerably less than half as much work, so it might be a little hard to prove that the efficiency of the press crew had in this case gone up 20 per cent.

In fact, the writer concurs in the result obtained by Mr. Bain who figures 83.3 per cent.

But there is a still deeper application of this subject. In dealing with percentages as with averages, there is always a possibility of confusion, and there is never the clear-cut comprehension which results from other methods.

For instance, when a man loses five dollars, whether he be a millionaire or a brick manufacturer, there is no mistaking the amount lost, altho it would fall far more heavily on one than on the other. Let us therefore translate the given problem into money, by assuming a rate of 25 cents per hour. Then the standard cost per piece is \$3.25 divided by 702, or .00463. The standard cost of the number produced would then be 675 times this amount, or \$3.13, approximately. The actual cost is \$3.75, so that the loss is approximately 62 cents per hour.

When our results in brick manufacturing are expressed in terms of dollars and cents, rather than per cents., accounting in our industry will be revolutionized.

* * *

IN the WAKE of the NEWS

Being Brief Mention of a Host
of Interesting Happenings in the
Varied Fields of Clayworking

Raritan River Clay Miner Is Dead

Edwin W. Valentine, a prominent clay miner of former years in the Raritan River section, died at his home at Woodbridge, N. J., October 16, aged 70 years. He is survived by his widow, two daughters and one brother, Oscar G. Valentine.

Hand of Death Grasps Henry Butwell

Henry Butwell, brick manufacturer, aged 91 years, died at Toronto on October 20, after spending 65 years in the business. His first plant was on the property where Grace and Clinton Streets now are. Later he had a plant on the Lake Shore Road at Humber Bay. Two years ago the land was sold to the Hydro-Electric Commission for a right-of-way for the electric radials and the plant was moved to a new location. Of late Richard Butwell, his son, has been the active manager of the plant. In addition to the business of making brick, the late Henry Butwell was for 70 years foreman brick-maker at the Central Prison on Strachan Avenue, where brick was made by prison labor for the Mercer Reformatory.

Succumbs to Illness

John F. Robertson, 48 years old, vice-president of the Superior Brick Co., died last week in a Pittsburgh, Pa., hospital after an illness of nine days. He was a native of Forneith, Perthshire, Scotland, and had been a resident of Pittsburgh and vicinity for the past 33 years. Besides his connection with the brick company he was owner of the John F. Robertson Co., president of the Lawrenceville Bronze Co., and of the Neville Lubricating Co. He was prominent in Masonic circles and was a member of the

CRESCENT BELT FASTENERS

"Make Good Belts Give Better Service"

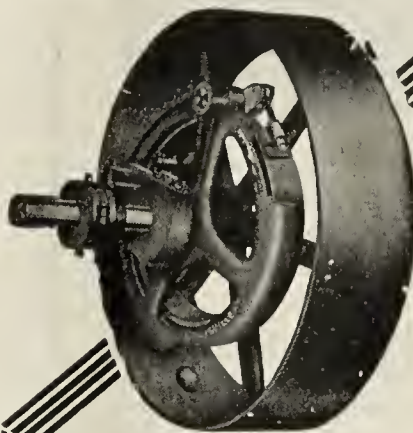
Once on, Crescents are on to stay. A Crescent joint will outlast the most durable belt. No part of belting is punched out or weakened. Maximum strength maintained. Belt runs same as endless on pulley side. No knocking or thumping. Noiseless. Joint hugs pulley. Full power transmission insured.

Write for new Booklet W on Increasing Belting Efficiency.

CRESCENT BELT FASTENER CO., 381 Fourth Ave., New York

Canadian Branch: 32 Front St., West, Toronto, Canada

England: 32 Paradise St., Birmingham



Performance

Caldwell Friction Clutches are giving years of dependable, trustworthy service. Their simplicity, ease and perfection of adjustment, and freedom from breakage assure thorough satisfaction. There are only eleven parts, all designed to have their greatest strength in the direction of greatest stress. Constructed like an automobile brake, a flexible, Raybestos-lined band gripping the entire circumference of the friction ring and transmitting all the power evenly, quickly, surely, Caldwell Clutches combine strength and dependability with unremitting, life-long service.

Write for Catalog

W. E. CALDWELL CO.

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400 E. Brandeis St., Louisville, Ky.

Caldwell
FRICTION
CLUTCHES

STEAM!

The reliability of your steam supply is never more certain, or the cost more reasonable than when you are using COKAL STOKERS.

COKAL HAND STOKERS

are durable and efficient. They are operated entirely by one lever. It does not require a skilled mechanic to do the work either. Anyone who understands firing can handle the COKAL.

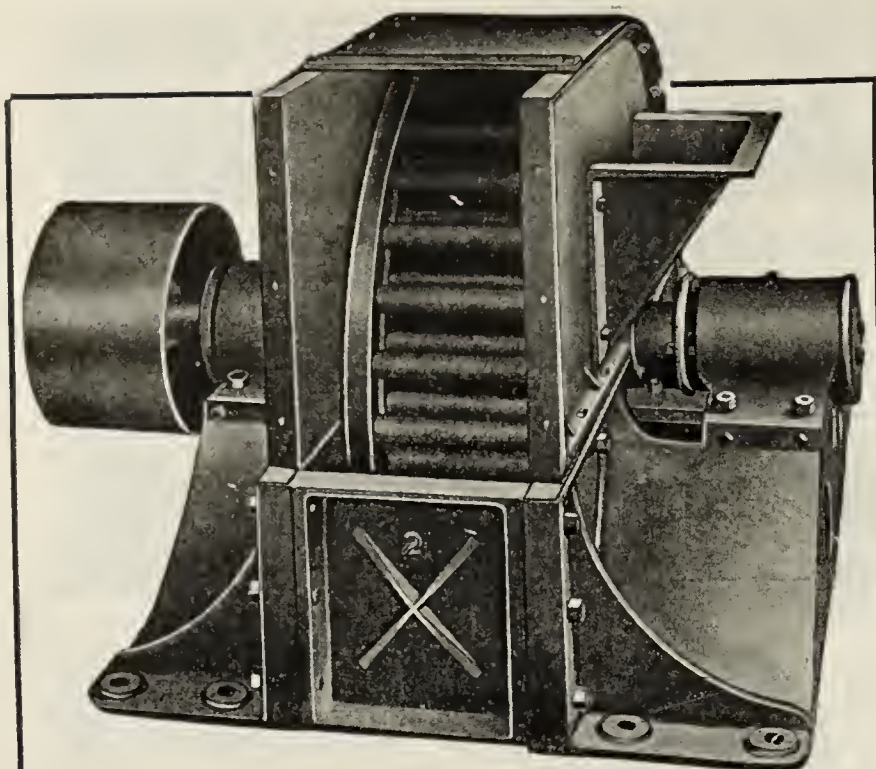
The original installation can be increased as the growth of your needs require.

The third and fourth repeat orders testify to the satisfaction our stokers are giving users.

FOR BOILERS OR KILNS

Write today for information

COKAL STOKER CORPORATION
1037 NORTH CLARK STREET, CHICAGO



This Pulverizer is considered by its users to be the most economical and practical way of pulverizing clay or soft shale. Every wearing part of the machine is made of steel and all boxes are brass bushed and adjustable.

This pulverizer has but one shaft and pulley. This does away with the constant springing of the old style hollow shaft which causes so much trouble in the two shaft machines.

We sell a complete line of brickyard supplies such as

BRICK MACHINES MIXERS TRUCKS BARROWS
SCREENS MOLD BOXES LINERS

FERNHOLTZ BRICK MACHINERY COMPANY
ST. LOUIS, MO.

You won't have to worry about competition if you treat your clay with

R. H. Precipitated Carbonate of Barytes

You can safely guarantee that your brick will be

Scum-Proof

You can get a higher price and influence architects to specify your product because Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's dependable.

*We have a complete line
of high grade chemicals
for the clay industry*

**The Roessler & Hasslacher
Chemical Company**

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Chicago, Ill. Cleveland, O. St. Louis, Mo.
Kansas City, Mo. San Francisco, Calif. Philadelphia, Pa.
Boston, Mass. New Orleans, La.
Pittsburgh, Pa.

National Association of Stationary Engineers. He leaves his widow, one son, his father, three brothers and three sisters.

Dies After Nine Months' Illness

After an illness of nearly nine months, Thomas H. Esner, brick manufacturer of Philadelphia, Pa., passed away at his home. Mr. Esner was head of the business founded by his father. He is survived by a daughter and a sister.

Two Clay Men Go on Deer Hunt

Andrew Dods, manager, and Charles A. Millar, superintendent of the Ontario Sewer Pipe Co., Mimics, Ont., left on October 20 for a fortnight in the north hunting deer.

C. U. Harris Changes Position

After six years as general manager of the Paden City (W. Va.) Pottery, C. U. Harris has resigned. He has accepted a similar position with the Sherwood Pottery Co. at New Brighton, Pa.

I. E. Burkett is Seriously Injured

The many friends of I. E. Burkett, manager and chief engineer of Schofield-Burkett Construction Co., Macon, Ga., will learn with much regret of an accident that befell him recently, in Philadelphia. He was struck by a street car and very badly injured. He is still in Jefferson Hospital, Philadelphia, but is improving rapidly and expects soon to be able to return to his home in Macon.

Organize Distributing Plant

That San Bernardino will soon house a distributing plant for all kinds of clay and stone building materials, sewer and irrigation pipe and a complete line of contractors' equipment was made known recently by H. J. Crowe, president of the H. J. Crowe Co. which was organized recently in San Bernardino. The lease has been secured on part of the Southern Pacific Railroad property and the new company is waiting for final notice before beginning work on the warehouse and yards.

The H. J. Crowe company is backed by the Los Angeles Pressed Brick Co. which has been largely interested in supplying the trade in interior cities for several years. It was decided that San Bernardino would be the most advantageous location for supplying a large number of nearby cities, such as Riverside, Redlands, Colton, Pomona, Uplands, Corona and others. The company will carry in stock some 20 different kinds and makes of building materials besides contractors' equipment and concrete mixers. It will also pay particular attention to developing the demand for hollow tile as a building material. Local contractors have been asked to bid on the construction of the warehouse which will be of hollow tile 84x50 feet. If there is no delay in the signing of lease papers now in the hands of railroad officials, it is expected that the plant may begin construction by the first of November.

Georgia Manufacturers Fighting Rate Increase

The Georgia Brick Manufacturers' Association and the Georgia Forest Products Association have combined forces in fighting proposed increases in freight rates in Georgia. The railroads have filed a request for rate increases with the Georgia Railroad Commission amounting in some instances to more than double the present rates. Advertising in the daily press is being done in the hope of getting public opinion on the side of the manufacturers,

and to show the hardship any rate increases will work both on the manufacturers and on the public. Considerable data is being gathered which will be presented to the railroad commission when the case comes up for a final hearing.

Takes Over Old Brick Plant

The old Foster brick plant at Boise, Idaho, has been taken over by F. Kloefer, who is operating it for the purpose of manufacturing the brick for a new schoolhouse to be built in that city. Mr. Kloefer is planning extensive improvements for next year, and hopes to put his plant on a paying basis.

Suspends Work for Indefinite Time

Operations at the plant of the Macomb (Ill.) Sewer Pipe Co. have ceased. It is not known at this time just how long work will be suspended. This company is one of the largest clay products producers in the Middle West.

Terminates Long Shutdown

After being closed down for the greater part of the past year, the Ottawa (Ill.) Fire Proofing Co. has resumed work. According to officials of that factory it is expected that the plant will be kept going at full swing thruout the entire winter. 25 or 30 men were given employment and it is expected that a number of more men will be taken on in a short time.

Will Build Kilns and Make Improvements

Operations for the enlargement of the Independence (Kas.) Brick Co., will be begun very soon. To take care of orders as fast as they come in the company is planning on building several new kilns. Harry Jiencke, owner of the plant states that orders are coming in rapidly and the plant is inadequate to handle them. Building operations began when Mr. Jiencke announced a reduction in the price of brick and many people took advantage of the lower price. Paving brick prices have also been reduced and as a result a number of bids for paving have been accepted by the city.

Will Inspect St. Louis Plants

Andrew Hillenbrand, Jr., of the Progress Pressed Brick Works, Louisville, plans to run over to St. Louis within a few days, planning to inspect some of the brick plants there, and also to look over some equipment.

Investigating Tile Loading Methods

A. P. McDonald, of the P. Bannon Pipe Co., and James T. Howington, of the Coral Ridge Clay Products Co., of Louisville, Ky., are in Atlanta for a couple of days, attending a railroad hearing, relative to maximum and minimum and other methods of loading hollow tile, in order to reduce breakage to a minimum. Mr. Sturtevant, of the Hollow Building Tile Association, went South with the Louisville men to attend this meeting.

Rail Strike Fear Stimulates Orders

For the first time since early last spring the Louisville Fire Brick Works hit into full time operation at the Louisville, Ky., plant during the week of October 17, and is going ahead on that basis for the time being at Louisville, but is only running

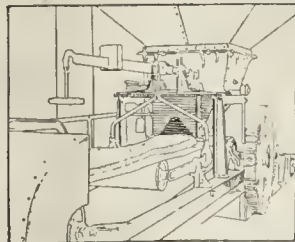
FOR QUALITY'S SAKE



Don't rely upon a pug mill man to temper your clay. No matter how much experience he has had he is only human and is bound to make mistakes.

A Poidometer in your plant will absolutely guarantee perfect mixing and tempering of your clay. It works entirely automatically; just set it to deliver the required amount of clay (1½ to 21,000 lbs. per minute). Never lays off, works under any conditions without the need of repairs, is 99.75% accurate.

If you have never seen a Poidometer in operation, write us today. No obligation.



**Schaffer Engineering &
Equipment Company**
2828 Smallman St.
Pittsburgh, Pa.

The Invincible Barrow



This favorite barrow has lost none of its popularity. We furnish them for either brick or sewer pipe and with plain wood, babbitted or spring bearings. They are honestly constructed thruout. On account of increased manufacturing facilities we are able to make immediate delivery.

Write for prices.

TORONTO FOUNDRY & MACHINE CO.,
Toronto, Ohio



Dryer, Transfer and Clay Cars,
with Flexible Bearings.
Switches, Turntables and Track.
THE CHASE FOUNDRY & MFG. CO.
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CHASE

WHAT METHOD DO YOU USE?

This question when applied to the manufacture of Stiff Mud Ware deserves consideration.

The Modern Way is the Right Way

THE ROLLER PRESS for all clays, shales, fire clays, surface clays, short bonding clays and laminating shales and clays.

Brick, Hollow Ware, Roofing Tile, Floor Tile and Drain Tile can be made on the ROLLER PRESS.

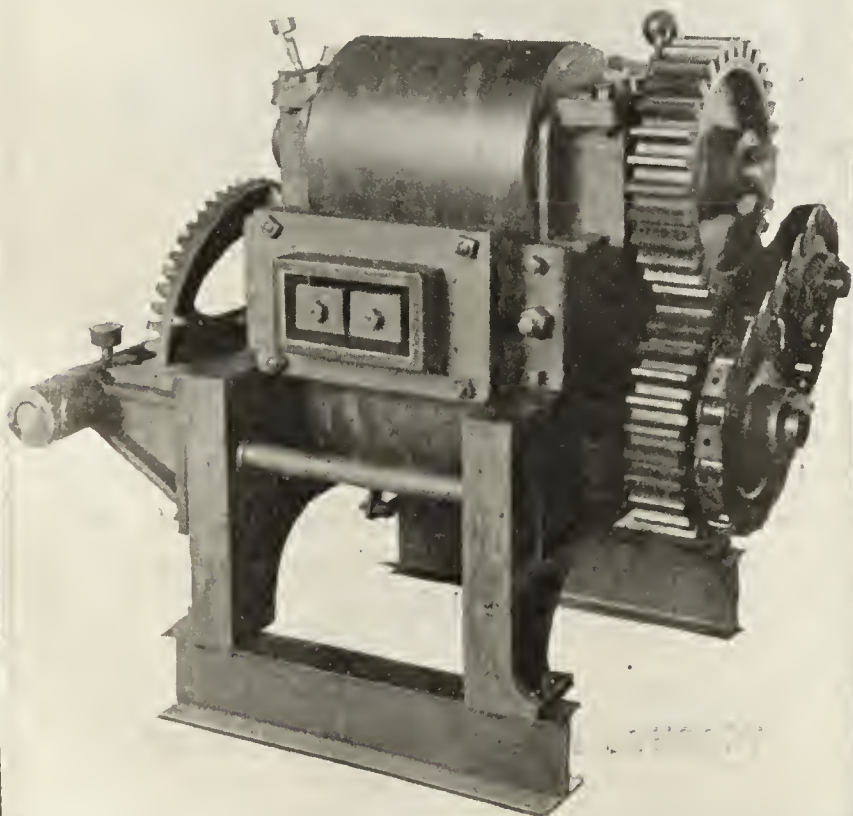
Start now to solve your production problems.

CLAYCRAFT SERVICE COMPANY

503 Wainwright Building

St. Louis, Mo.

Everything for the Clayworker.



four days at the Carter County plant. The company reports that orders are coming much more freely, and that the rail strike cloud had resulted in more active ordering by concerns which have been operating with low stocks on hand.

Exhibits Tile In Fire Prevention Week

Hollow tile was featured during Fire Prevention Week, October 3 to 10, as a fire resisting and prevention material in Louisville, Ky. The P. Bannon Pipe Co. erected a small open-end building of hollow tile, with chimney lined with flue lining, in Lincoln Park, in the downtown section. Straw was placed in the building and set on fire, at the same time a



Exhibit of P. Bannon Pipe Co. at Louisville, Ky., During National Fire Prevention Week.

test run being made by the fire department. Information in pamphlet form was distributed and the press supported the movement well. It was backed by the Underwriters, local Safety Council, and various organizations. The governor issued a proclamation making October 10, state fire prevention day.

Clay Sufficient for One Hundred Years

The Savage Mountain Fire Brick Co., Frostburg, Md., recently completed surveys of its properties, including lands at Potomac, W. Va., and found sufficient clay in the eight-foot veins extending into the Savage Mountain to furnish the plant requirements for a hundred years. The company has been operating since 1862, having been founded by the late Lovelace M. Gorsuch. The high-grade fire clays abounding in this section were discovered, it is said, around 1850-1855. In normal times, the company gives employment to more than 200 at its mines and plants, including the branch works at Potomac, W. Va.

Shipping 1,000,000 Brick a Month

Orders which are now coming in to the Pengilly Brick Co. at Hibbing, Minn., have necessitated capacity production, which is approximately 1,000,000 brick a month. Work will be continued thruout the fall and production may possibly be maintained during the winter. At present the company is employing 35 men, but may put more on the pay-roll in the near future.

New Refractory Company in Minnesota

The Keystone Refractories Co., Minneapolis, Minn., has been organized under Delaware laws with capital of \$600,000, to manufacture fire brick and other refractory products. The com-

pany is headed by H. B. Finch, W. K. Nash and C. R. Wilson, all of Minneapolis. The company is represented by the Delaware Registration Trust Co., 900 Market Street, Wilmington, Del.

St. Louis Section A. C. S. to Meet

A meeting of the St. Louis, Mo., section of the American Ceramic Society for the purpose of making plans for this year's meetings will be held at the Annex Hotel, Sixth and Market Streets, November 3, 1921. All members of the clay working or allied industries are always welcome at these meetings.

Will Start on Paving Work

In order to secure greater competition among bidders, the city council of Kansas City, Mo., has determined to try the plan of advertising for paving bids without specifying the material to be used. In this manner, the city will have a larger variety of material to select from, and, it is believed, will secure better prices, as the competition will be open to a larger number of contractors.

In order that the work on the streets will give work for the unemployed at once, it is a stipulation that work shall begin at once on contracts aggregating \$60,000 for street improvements in Kansas City. The contractors all have agreed to the stipulation.

Takes Employes on Outing

A. P. Green, president of the A. P. Green Fire Brick Co., Mexico, Mo., adopted a novel method for giving his employes an outing recently by taking them to Columbia, Mo., to witness the football game between the Missouri University Tigers and Ames of Iowa. About 50 employes were included in the party, and they were accompanied by Mr. Green and his three children as well as J. Harrison Brown, sales manager of the factory and a graduate of the School of Journalism at the University of Missouri. The fire brick company delegation arrived in Columbia early on the day of the game, and the Commercial Club of Columbia, thru its secretary, Fred Eldeau, met the visitors at the train.

Refractories Company Enlarging

J. B. Arthur, secretary of the A. P. Green Fire Brick Co., of Mexico, Mo., has announced that the company has paid \$5,000 for a four months' option on the plant of the Alsey (Ill.) Brick & Tile Co. They are making extensive investigations regarding the quality and supply of clay and labor and of manufacturing conditions. They are moreover having appraisals of the value of the property made.

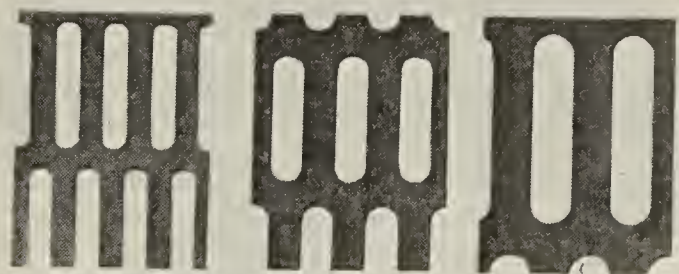
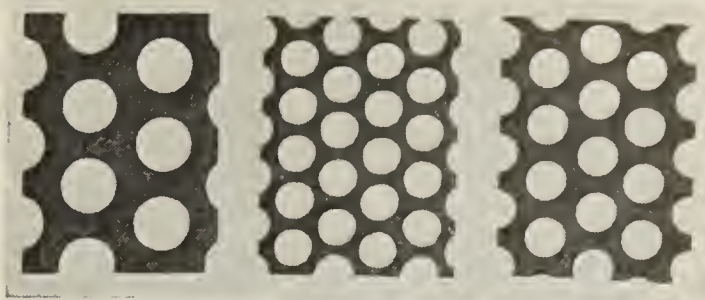
Edwards Brick Reorganizes

The Edwards Brick Co. of Columbia, Mo., will be reorganized at once with a capitalization of \$50,000 and sale of the additional stock to bring this about has been authorized by the board of directors of the company. Announcement has been made that the plant will be developed until it will be capable of manufacturing any kind of product in which fire clay figures.

The new company has engaged the services of S. E. Cullom of St. Louis, who is reputed to be one of the best ceramic engineers in the United States, and who already has subscribed for \$5,000 worth of stock in the reorganized company.

According to Mr. Cullom, the Edwards Brick Co. has a very fine natural location from the standpoint of material of any similar plant in the United States. He says that the clay mined on the Edwards property is as good as any in the

Perforated Steel Screens



For Screening Clay, Shale, Sand, Gravel, Stone and Cement

All sizes and shapes of holes in metal of proper thicknesses to give the best screening results.

Sheets furnished flat or rolled to shape for revolving screens.

THE HARRINGTON & KING PERFORATING CO.

635 N. Union Ave., Chicago, Ill.

NEW YORK OFFICE: 114 Liberty St.

Buy "signed" valves—with the Jenkins Diamond Mark and signature on the body.



Figure 241
Globe



Figure 243
Angle

Quick Opening Valves

Globe and angle types, standard pattern suitable for working pressures of 150 pounds steam, or 250 pounds water. Valves open in about quarter the usual number of turns. Ordinarily fitted with lever handles but can be furnished with hand wheel if desired. Fitted with Jenkins Renewable Disc.

At supply houses everywhere.

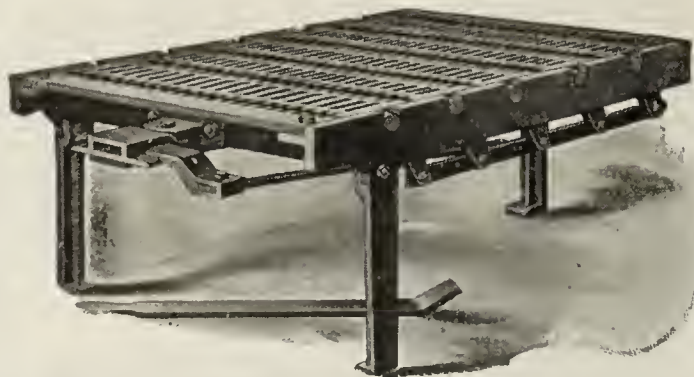
JENKINS BROS.

New York Boston Philadelphia Chicago
Montreal Havana London
FACTORIES: Bridgeport, Conn.;
Elizabeth, N. J.; Montreal, Canada.

2338-J

Jenkins Valves
SINCE 1864

PUT THEM IN THIS WINTER



The Canton KilnGrate

From the time of the first installation in the kilns of the Massillon Stone and Fire Brick Co. of Massillon, O., up to the present time—dozens of sets have been installed—and are giving utmost satisfaction. Get a trial set, and prove with them that you can save over one-fourth of your fuel bill. Put them in just one kiln—their utility and the saving accomplished, convinces that the Canton is the only way.

Write Us Today

The Canton Grate Co.
1709 Dillon Place, CANTON, O.

LABOR SAVING MACHINERY



Adel Excavator The Continuous Planer

The right machine and the correct method for excavating hard shale, chalk rock and other materials not of a soft, sticky nature. The fine cut taken by the machine thru the different strata and around a large arc gives a thoroughly mixed product which requires minimum crushing and processing.

This machine runs into the shale bank, cutting a swath 54 feet wide and from 40 to 60 feet high. Swinging thru a wide angle the excavator is steadily progressed, making a light cut thru the different strata, yet with such rapidity that the capacity ranges between 50 and 75 tons per hour, according to the material.

S

STEPHENS-ADAMSON MFG. Co.
AURORA. ILLINOIS

A

country. In addition to the clay, the company can mine enough coal on its property to satisfy all of its wants in the manufacturing line.

The reorganized company will install new machinery of such character that the plant can make any building product made from clay, thus making it unnecessary for any Columbia contractor to send out of the city for building material.

Will Operate Building Material Exhibit

Sunderland Bros. Co., now located in the Keeline Building, Omaha, Neb., is making preparation to move early in the spring to their recently acquired building, on the southeast corner of Fifteenth and Harney Streets, Omaha.

In addition to this the company will have the fourth floor of the adjoining building, which will be used for a display room. It is planned to make the display room one of the most complete building material exhibits in the country. The room is 135 feet long, and will have over 3,000 square feet of floor space. In addition to the general exhibit of face brick, terra cotta and ornamental floor tile, the exposition, as it is termed by the company, will display marble of all kinds.

The company operates marble mills at Sioux City and Omaha. The latest unit to the Omaha mill is now under construction and will be one of the most complete marble mills in the United States. The marble display will assist greatly in the beautification of the display room.

Building materials and specialties will play important parts in the display arrangement. Many of the newer products that are destined to be used extensively in the future will be exhibited.

Burned clay products will probably be displayed more generally than any other line, owing to the company's activities in distributing practically every burned clay product that is made.

The exhibit is to be educational as well as beautiful. No instructive values will be sacrificed in order to arrive at beauty, but from indications it is reasonable to believe that the exhibit will be both beautiful and instructive and will fill a want felt by the architect and contractor in that territory.

Large Brick Order Secured

The Philips-Harper Co., Trenton, N. J., dealer in burned clay products of all kinds, has secured an order for about 500,000 brick, for the new office building for the state on West Hanover Street.

Terminates Eight Months Idleness

The Keasbey, N. J., plant of the National Fireproofing Co., after an eight months' period of idleness, is again on the active producing list. It is said that a full force will be employed at an early date. The company has equipped the plant for electric operation in all departments and steam power will be discontinued. In a statement issued from headquarters at Pittsburgh, Pa., it is set forth that all plants of the company in different parts of the country have been placed in excellent condition to meet all demands for coming production.

Brick Enjoys Cheaper Insurance

The Independent Brick Co., Trenton, N. J., the largest producer in that section, has developed an active promotion campaign for "Build of Brick," using pertinent arguments of lower insurance rates enjoyed by structures of this type to show the lasting nature of the construction. It is pointed out that the insurance rate on a brick dwelling is 12 cents a hundred, as compared with 17½ cents on a frame residence; and on a

brick store, 30 cents a hundred, as against 60 cents for a frame structure.

New Organization in New York

The Cherry Ridge Brick Corporation, New York City, has been incorporated with a capital of \$25,000, to manufacture brick and other burned clay products. The incorporators are J. W. Collopy, Jr., G. Stewart and A. R. Prendergast. The company is represented by John Ingle, Jr., 2 Rector Street, New York.

Doubles Capital Stock

The Stark Brick Co., Canton, Ohio, has increased its capitalization from \$35,000 to \$75,000, according to announcement by officials recently.

Hocking Valley Plant Being Repaired

The Hocking Valley Brick Co., of Columbus, Ohio, which operates four plants at Logan and Nelsonville, Ohio, is making needed repairs at the plant of the Ohio Fireproofing Co., at Nelsonville. The plant at Logan is being operated with a full force.

National Fire Brick Begins Work

The National Fire Brick Co., of New Philadelphia, Ohio, which has been idle since August 1 has placed its plant into operation on a part time basis. Most of the other brick and clay products plants in what is known as the Dover-Strassburg region are in operation on a part time basis. Some of these plants run five days weekly.

Working Full Time Making Pavers

The paving brick plant of the Hocking Valley Brick Co., at Logan, Ohio, is in full operation. The other three plants in the concern consisting of plants of the Nelsonville Brick Co., and the Ohio Fireproofing Co., at Nelsonville are down temporarily. Some repairs are being made at these plants, several of which manufacture building tile.

N. P. B. M. A. Annual to Be Held in Pittsburgh

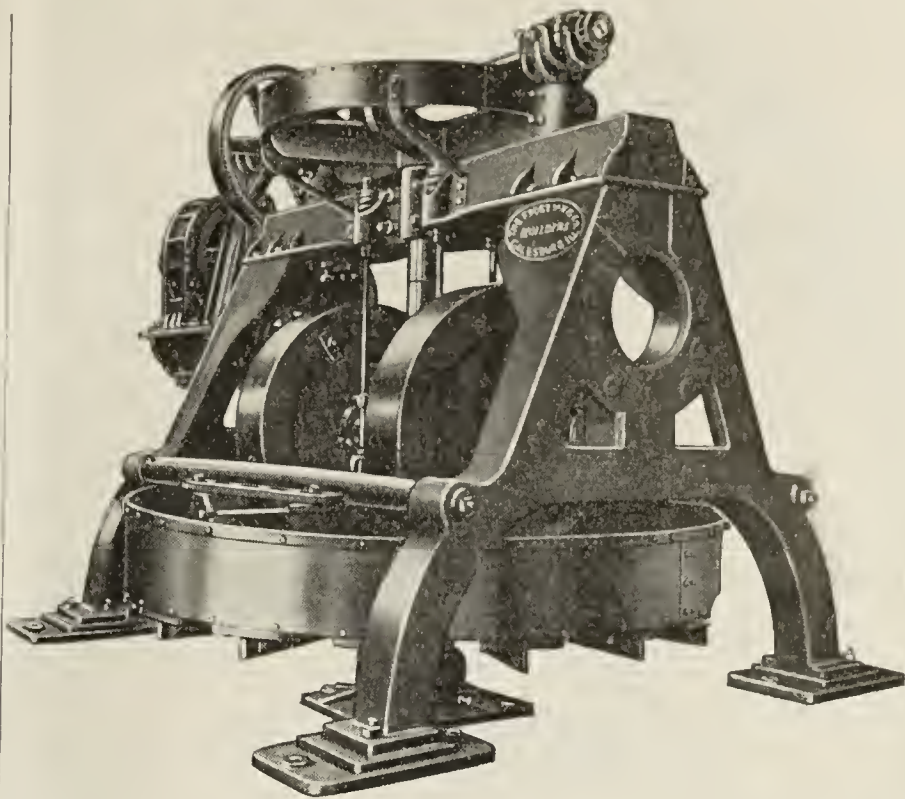
Ohio Paving Brick Manufacturers and Agents are preparing to attend the annual meeting of the National Paving Brick Manufacturers' Association which will be held in Pittsburgh early in December. The party has not yet been made up but will be in charge of J. R. Marker, secretary-engineer of the Ohio Paving Brick Manufacturers Association.

Fight for Lower Drain Tile Rates

The hearing on the complaint of drain tile manufacturers against high freight rates on railroads was held in Columbus, October 24 and 25. The drain tile manufacturers, functioning under the name of the Ohio Drain Tile Association brought strong evidence to show the unreasonableness of the present freight rates. The complaint asks for a reduction of the 40 per cent, which was permitted by the Interstate Commerce Commission about a year ago. The tile manufacturers and the railroads will be permitted to file briefs before the decision of the commission is given.

Secure Lower Rail Rates

The application of the John Kline Brick Co., of Columbus, Ohio, to the Ohio Public Utilities Commission for a reduction in the rate on building and sewer brick was successful. The commission granted a reduction on these commodities from



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The Marion "Rust Special" Feeder-Mixer will speed up your off-bearers and keep them busy always. It will greatly improve the quality of your ware by properly mixing and tempering your clay. It will save the labor of your pug mill man, thus paying for itself in a very short time.

We would like to know your requirements—and perhaps we could offer some helpful suggestions. We manufacture everything for the clay plant.

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RUBBER BELTING

Is the most economical form of belting for the various kinds of transmission drives used in the brick and clay industry.

And where can you find as satisfactory an article for elevating and conveying purposes as rubber belting?

Our belting experts will gladly assist you on any belting problems.

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98 cents to 60 cents. It was intimated that if other companies attack unfair rates there will be reductions. The cut made approximates 40 per cent.

Ohio and Pennsylvania Face Brick Centers

Statistics recently compiled show that in the production of face brick the fourth Federal Reserve District holds first place in the United States. Ohio and western Pennsylvania form the nucleus, and from these states this particular kind of building material is shipped broadcast over the country. In the amount of common brick produced the fourth district ranks about third, the Chicago district taking the lead and New York and the Hudson River second.

Starts After Several Months' Shutdown

The plant of the Hocking Valley Products Co., located at Greendale, Ohio, which has been closed down for several months, was placed in operation the latter part of October with a full force. The company makes rough texture face brick. During the time the plant was closed down, necessary repairs to the kilns and the power plant were made. It is expected that the plant will be kept in operation indefinitely, according to H. F. White, sales manager for the brick department.

Ideal Wall Invades Cleveland

The first ideal hollow walls of brick, as originated by the Common Brick Manufacturers' Association of America, ever built in Cleveland, Ohio, are being erected in that city. The material used was supplied by the Cleveland Builders' Supply & Brick Co. Officials of the Common Brick Manufacturers' Association, contractors, builders and others interested in a more economical method of building brick walls approved the work recently.

Sewer Pipe Plants Busy in Akron

Conditions in the Akron, Ohio, district in the clay products industry depend upon the articles manufactured. Owing to very slack building operations production in brick and building tile has dropped off heavily. Sewer tile plants are enjoying a fair business and running full time. The surplus of finished sewer pipe is being piled up. Difficulties of cities in selling improvement bonds has tended to retard the tile production and sales are below those of 1920. Prices are 20 to 25 per cent. less than 1920 and wages have been reduced proportionately.

Brick Companies Exhibit at Fair

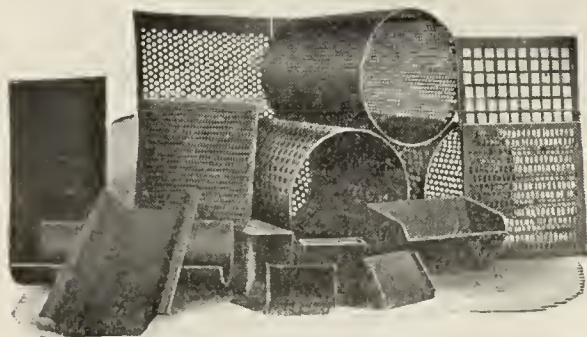
Among exhibits which attracted attention recently at the annual Stark County, Ohio, fair was one of brick, in the merchants display hall. It was a permanent exhibit built of brick and it served as a demonstration of how useful brick was in the home construction.

The display presented an elaborate brick chimney, open fireplace, and the many ways in which brick construction eclipses all other types. To the front of the exhibit was a wall four feet in height of Metropolitan paving block showing its usefulness to the home and business block construction.

The Belden Brick Co. and the Metropolitan Paving Brick Co. of Canton, Ohio., collaborated on the exhibit which will be a permanent one. The exhibit was built by Canton bricklayers and is very unique.

During the four days of the exposition these companies had representatives in the booth distributing literature with a bearing on brick. The slogan "Build with Brick" was

HENDRICK SCREENS FOR ALL PURPOSES



**ELEVATOR BUCKETS
CONVEYOR TROUGH and FLIGHTS
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GENERAL SHEET and
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conspicuous in the booth decoration. It is one of the best advertising stunts at the fair and was the source of much comment among local manufacturers and merchants.

May Build Plant Near Uhrichsville

It is announced that New Philadelphia, Ohio, may obtain the new plant of the Donahey Power & Products Co., Cleveland, of which former State Auditor A. V. Donahey is president.

It is announced that the company will build its plant somewhere between the Marietta division of the Pennsylvania railroad in Stonecreek Valley and Newport, two miles south of Uhrichsville. The firm has options on several desirable sites and the plant will be built where the most desirable and economical conditions prevail and the best raw materials can be found within a 12 mile radius and within the No. 5 clay belt.

The firm expects to sell sufficient stock to build and equip a plant for the manufacture of sewer pipe of all kinds and building materials from the famous No. 5 clay vein which has made Tuscarawas County, where it abounds, one of the greatest clay deposits in the world.

Chemicals and pigments from tested minerals on 600 acres of land in Harrison County, under lease by the company, will be manufactured by the company.

New Line of Face Brick Produced

A new face brick, long contemplated by the Cleveland (Ohio) Builders Supply & Brick Co., and in process of perfection for several months, made its bow in Cleveland recently. The first exhibit of the brick to the building public was made in the company's display rooms in the Leader-News Building, and revealed the fact that altho only one type was anticipated, several have been produced, each in different shadings, to meet most varied tastes in exterior building work.

Chief feature of interest to the brick expert and the trade is the announcement that the different shades of color are produced by manipulation in burning, while the "biscuit" lends itself to the creation of a variety of textures as well. Several varieties of greens, browns and heathers are possible, as well as light and dark reds. Some of the brick combine both colorings, edges being in gunmetal, for example, with a heart of red. Greater varieties and unusual construction are promised the seeker after the distinctive. It is claimed for these brick that all colorings are natural, and are produced without the introduction of chemicals at any stage.

Equipment installed at the plant where these new face brick are being made, produces what is claimed a brick of more uniform size eliminating the necessity of bricklayers rejecting brick which often happens in order to create an even wall. This will result in more rapid work on a building and lessen the cost.

Textures produced include the standard rug effect, vertical scorings, mat effects, and the regulation smooth red.

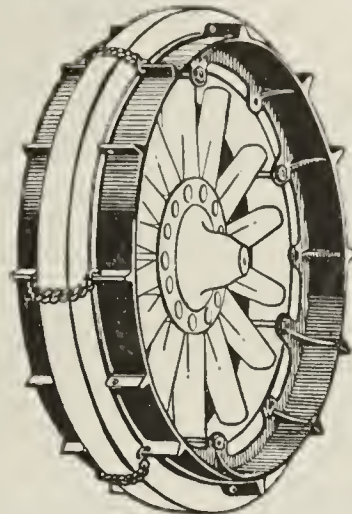
Names have been coined for the various rough textures—Ver-tex, Mat-tex and Rug-tex. The red shades include light, medium, dark and mixed shades, and other shades include medium and dark browns, greens, gunmetal and red hearts.

A. S. Reid & Co. Move Offices

A. S. Reid & Co., Inc., announce the removal of their offices from the Morris Building to 1615 Spruce Street, Philadelphia, Pa. With the increased facilities at the new offices, the company is in a better position than ever before to render efficient service to its customers.

MAINTAINING PERPETUAL EFFICIENT SERVICE WITH LESS RUNNING EXPENSE

FOLEY TRACTION RIMS allow the full power of your engine to move your truck, and not to spin the wheels. This applies largely when the truck is forced to go through soft sand and mud. While running

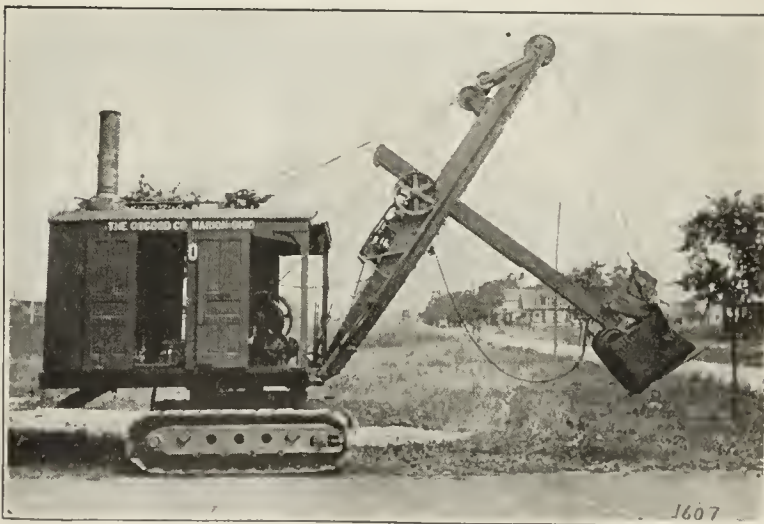


on smooth roads the rims clear the ground by about two inches, but when in soft sand or mud the load is immediately taken up by the four steel rims. Thus you can never be stuck and the expense of delays is entirely eliminated.

FOLEY TRACTION RIMS carry a full guarantee for their performance and long life. They may be used with either solid or pneumatic tires. The results are the same.

Our latest catalog contains full information. Gladly sent upon your request. WRITE TODAY.

FOLEY TRACTION RIM CO., Inc.
1311 Hennepin Ave., Minneapolis, Minn.



Demand the BEST
and it will always be

OSGOOD

**Liberal Dimensions,
Sturdy Construction,
Ample Power,
Long Life.**

**Revolving and Railroad Type
Steam Shovels $\frac{3}{4}$ -6 cu. yds.**

The OSGOOD Company, Marion, Ohio U. S. A.

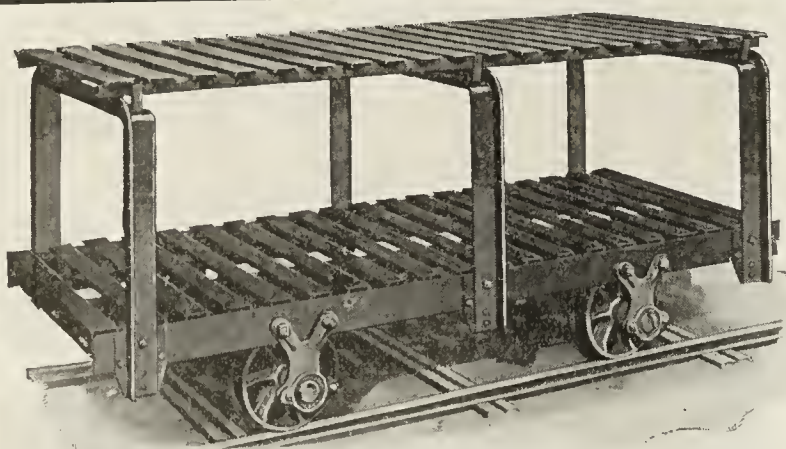


**HY-GRADE MANGANESE CO.
WOODSTOCK, VA.**

Miner
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Grinders

**Especially Prepared
for Brick Making**

Sales Office: CHARLESTON, W. VA.



Long Life and Dryer Cars

Long life in a dryer car means actual dollars to the wide awake clay plant manager.

Robinson Cars have that built in quality which makes them endure the hard usage of the modern clay plant without the constant need of repairs; which makes them render profitable service no matter what demands are put upon them. They are ruggedly constructed of the best of materials.

For real satisfaction so far as dryer cars are concerned, you will make no mistake in relying upon ROBINSON CARS.

Let us send full information.

FRANK H. ROBINSON

Dryer Cars and Clay Working Equipment
Kiln Bands Carried in Stock

FACTORY AND GENERAL OFFICE, PITTSBURGH, PA.

Increases Capital to Half Million

The Standard Refractories Co., of Tyrone, Pa., has filed notice of an increase in capital stock from \$300,000 to \$500,000.

Ask for Big Reduction in Freight Rates

Thirteen manufacturers of sewer pipe, flue lining and similar clay products, represented by Attorney Beecher W. Waltermire have filed an application before the Ohio Utilities Commission for a radical reduction in the freight rates on these products. The complaint avers that the traffic can not bear more than 70 per cent. of the present rates. It is claimed that freight rates on these products are 50 per cent. higher than in many other states. The hearing is scheduled for November 22.

Running Face Brick Plants Full Time

The two face brick plants of the Glen-Gery Shale Brick Co. at Reading, Pa., have been running at full capacity all year. Enough commons have been manufactured at these plants to supply the local demand. Demand for commons has not been very good during the year as the big market, Philadelphia, has been practically dead. New York City is the big market for face brick and the company is even shipping into Boston.

Cannot Sell Convict Made Brick

According to an opinion rendered by Deputy Attorney General Emerson Collin to Superintendent W. M. Lynn, of the Pennsylvania state hospital for the criminal insane, the hospital can not manufacture brick and sell them to the state for use in the new office building at Harrisburg, owing to the provisions of the act of 1913 relative to prison labor. It is also held that the clay on the land of the hospital can not be lawfully sold on the open market.

Expect Much Business Before Winter

The F. R. Thomas Clay Products Co., Central Bank Building, Memphis, Tenn., carload shippers and wholesalers of clay products, report improved trade in the city and country. Until cold weather starts they expect to be very busy. The autumn found them with much work brought forward from the summer and spring and much new work is being let.

Clay Products in Good Demand at Memphis

October trade in brick, terra cotta, tile and sewer pipe is reported good by Memphis, Tenn., manufacturers and dealers. Much of the summer building activity is going forward in the autumn and doubtless will until the very cold weather of winter. Both municipal sewerage enterprises, including the sewerage of Binghampton, recently made a part of Memphis, where \$100,000 of contracts are to be let this month, and work in various parts of the city together with rural land drainage, farm drainage and county work in various counties of Tennessee, Arkansas and Mississippi, also southeast Missouri are causing a good demand for drain tile and sewer tile. Common brick and face brick demand holds up well. For fire proofing and ornamental work there is a very good demand in clay products of all kinds.

Memphis Adopts Ideal Wall

What are said to be the first homes in Memphis, Tenn., utilizing the new Ideal system of brick construction are being erect-

ed at Nos. 405 and 407 Angelus Place by J. F. Smith, architect, associated with Mann & Gatling, architects.

The homes are six rooms and bath each, of attractive design, and priced to sell at about \$7,050, including the lot. The brick used are a red mat in one house and a hard finished brick in the other, from the B. Mifflin Hood Brick Co.

The Ideal system of bricklaying brings the cost of all-brick exterior homes down to about the cost of frame ones. It is damp-proof, fire resistant and does away with the necessity of furring or lathing from the inside of the exterior wall.

While this system is new in this country it is claimed to have been utilized in Spain for hundreds of years. The Fischer Lime & Cement Co., of Memphis, Tenn., is advertising the system extensively thruout the South.

To Spend \$50,000 on Addition

An announcement recently made states that Charles Brewington, owner of the Stamford (Tex.) Brick & Tile Manufacturing Co., will expend \$50,000 in the building of additions to the company's plant. The improvements will be made in order that the company will be able to manufacture paving brick and some unusual shapes in hollow building tile. A vast deposit of clay of very high grade has been discovered there.

Will Double Present Output

The Princeton (W. Va.) Brick Co. is planning for extensions and improvements at its plant for increased production. Additional machinery and equipment will be installed to double the present output.

Open New Whitby Clay Plant

The new brick plant of the Whitby Brick & Clay Products Co., Ltd., was formally opened by Mayor Hopper of Whitby on September 16. The plant is under the management of J. T. Baines and will employ about fifty to sixty hands when running to capacity. It is located in Ontario.

Extensive Trip Will Produce Valuable Data

Prof. W. G. Worcester of the ceramic department, University of Saskatchewan, returned to Regina on October 15, after an absence of nearly 2½ months in the far northeastern Saskatchewan, near Lac La Rouge and the Wapawekka Mountains making a reconnaissance survey for the Bureau of Labour and Industries of the Province of Saskatchewan.

The work was largely that of mapping and studying the geological formations, in addition to sampling and collecting specimens of the natural resources of the district. Assays and tests are now under way on the numerous samples collected. The report of the work done and the results of tests will be filed with the Minister of the Department who in due time will release it for public study.

The field covered was all in unsurveyed territory, occupied only by the Cree Indians and an occasional white trapper whose only source of touch with the outside world is thru the Hudson Bay Co. trading posts in the same manner as prevailed a century and a half or more ago.

The distance covered by Prof. Worcester in his work was roughly 180 miles by pack team, 400 miles by canoe and 300 miles of inland foot work, starting from, and returning to Prince Albert, Sask.

The only mode of transportation during the summer is by the Indian and his canoe, while in the winter dogs with the same chauffeur are used. Horses and Fords would be quite out of place in that district.

The One Man Digger



is cutting clay costs for many operators.

Light, economical, self-propelling. Track or caterpillar type mounting, gasoline or electric power. One man and the Bay City Digger will displace a dozen men. Always ready — rain or shine. The low price and operating cost enables the small operator to install this labor saving machine.

Write for particulars

BAY CITY DREDGE WORKS
2613 Center Avenue Bay City, Michigan

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Two 135-H. P. Units

GAS ENGINES

For Belt Drive or Direct
Connection to Generators

If in need of power and located in natural gas district, or if your power costs you over 1¼¢ Per K. W. Hr., write

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"PEABODY FOR SERVICE"

The Louisville Machine Manf'g Co.

Louisville, - - - Ohio

Designers and Manufacturers of

CLAY WORKING DIES

for

**Hollow Ware, Fireproofing
Brick and Various Purposes
in Dry or Lubricating Styles**

**Piano Wire Screens, Hand Cutting
Tables, Friction Winding Drums,
Conveyors and Elevators.**

QUESTIONS

A Two Cent Stamp May Bring
You Advice That Will Stop
a Waste, Improve Your Ware
or Lower Your Production Cost

*Address all communications intended for this department
to "Editor Questions and Answers," care of "Brick and Clay
Record," Chicago.*

Can Not Get Uniform Shrinkage

999. *Ohio—We are operating an eight kiln plant and manufacturing face brick. We have the round down-draft kiln 32 feet in diameter. Part of the kilns have what is known as the solid bottom and some the cross flue and perforated floor. The kilns all have good draft. We average nine days to the burn under an oxidizing fire. All the material we have is shale that burns to a good rich red color, vitrifies at about 1,950 deg. F. and fuses very easily. We are getting pretty good results but are not able to get a uniform shrinkage. We set our kilns 30 brick high. There is about one-half inch difference in the length of the top brick and the bottom brick. Can you give us any information to overcome this trouble?*

It seems to us that there must be a large variation in the heat that you obtain in different parts of your kilns. If the heat is almost uniform in the top and bottom, it does not seem possible that the brick should vary as much as one-half inch in length.

Your draft may be good enough, but possibly the bottoms of your kilns are damp. Moisture at this point reduces the heat that can be obtained, and thereby reduces the quality of the brick. We would suggest that you obtain several sets of cones, numbered from 010 to 1, and place them at different levels in your kiln. The first named cone melts at about 1,652 deg. F. and the second at 2,012. The results obtained by the use of these cones will show you what variation there is in the heats that you obtain in the tops and bottoms of your kilns.

It might be possible that certain parts of your kiln are set too tight, thereby obstructing the draft at that point.

Is there any difference in the results obtained in the solid bottom and in the perforated bottom kilns?

* * *

Wants Information on Vitrifying Brick

1,000. *Colorado—Can you tell me how to vitrify brick?*

From a practical standpoint, this period extends from the time at which settle or shrinkage starts, up to and including maturity, which is the condition in which the ware is commercially best.

The clay softens and shrinks in proportion to the amount of heat that is applied and the percentage of flux present. New silicates are formed and the body passes from a porous, spongy structure to a dense, hard tough material after cooling. A fracture shows that the tendency is towards a glassy condition, depending upon the degree of vitrification.

The degree of maturity varies greatly in different clays and wares. Paving-brick and sewer-pipe, for example, require a higher degree of vitrification than face brick, and face brick in turn requires a higher degree of vitrification than common brick or hollow ware, which are rarely vitrified.

At the end of the oxidation period, a uniform distribution of heat will have been secured in the kiln from top to bottom, and the problem is to increase this degree of heat on the floor

and ANSWERS

Best Authorities in Every Clay working Branch Are Called Into Consultation—Their Advice is Free to You, Thru These Columns

Should a reply be desired by letter, send a stamped and addressed envelope with your question, and it will be answered promptly.

of the kiln without overburning the top, and to bring it to such a temperature as will mature the bottom.

The bed of coals in the furnace should have been carried thin up to this point, but it is now advisable to slightly thicken up the fires and proceed more rapidly.

Do not make the twin mistakes of firing too light or trying to force the finish, but rather proceed with the previous tactics of making the kiln a collector of heat and then bottling it up by using the damper. The damper should be as low as possible, still maintaining a slow, languid draft thru all furnaces.

If the draft is too strong, it simply pulls away all accumulated heat and burns up an enormous amount of needless fuel, and on the other hand, if the draft is stagnant, a local heat only is secured in the top half of the kiln, causing the benches to split and roll, resulting in an overburned, kiln-marked top and an underburned bottom.

The ware should settle and shrink evenly and at a uniform rate, from top to bottom, and at this stage the principles of "bag-wall burning" must be applied. These principles are particularly valuable if the clay being burned has a short vitrification range.

In conclusion it may be said that we need all the information we can possibly obtain on the progress of the kilns being burned, in order to be successful; and to be successful is worthy of our very best efforts.

Draw trials frequently, as the kiln nears a finish, to determine the work being done. Study heat colors so that you can determine by sighting into the furnaces and peep holes, heat advance or loss. Take settle records frequently to determine rate and amount of settle. Use cones to determine work accomplished—and last and most important of all, use a pyrometer, that you may determine the progress of the heat at every stage of the burn, that you may be able to duplicate good results and avoid poor results.

It is possible to successfully determine the finishing point of a burn by any one of the above methods, but the chances for a successful "closing-out" are slim indeed, when compared to the use of all five points. Do not tie to any one method, but endeavor to become efficient in all.

A burner is the real producer; if he will with enthusiasm make an effort to dig into and master each single phase of his own individual burning problems, he will become efficient, and efficiency is—just makin' good.

✕ ✕ ✕

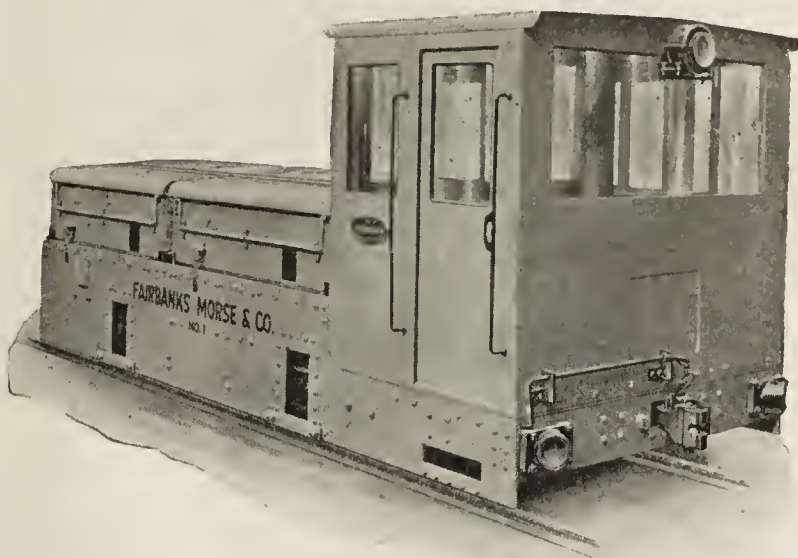
Makes First Hollow Tile in Winnipeg

It has been an expensive and a discouraging task to endeavor to produce a reliable hollow tile from the clays available for working in Winnipeg, Man., Canada., but the Alsip Brick, Tile & Lumber Co., Ltd., has successfully overcome the many obstacles and difficulties and produced an article in Winnipeg that is said to be second to none on the American continent.

The Winnipeg clay is peculiar in many respects, and requires special treatment before it is feasible to manufacture perfect



ELECTRIC LOCOMOTIVES



12-Ton Goodman Standard Gauge Storage Battery Locomotive

Trolley, Third Rail and Storage Battery Types.

Standard and Narrow Gauges.

For all Classes of Industrial Work.

Efficient in Performance

Economical of Power

Low in Cost of Operation

Highest Safety in Service

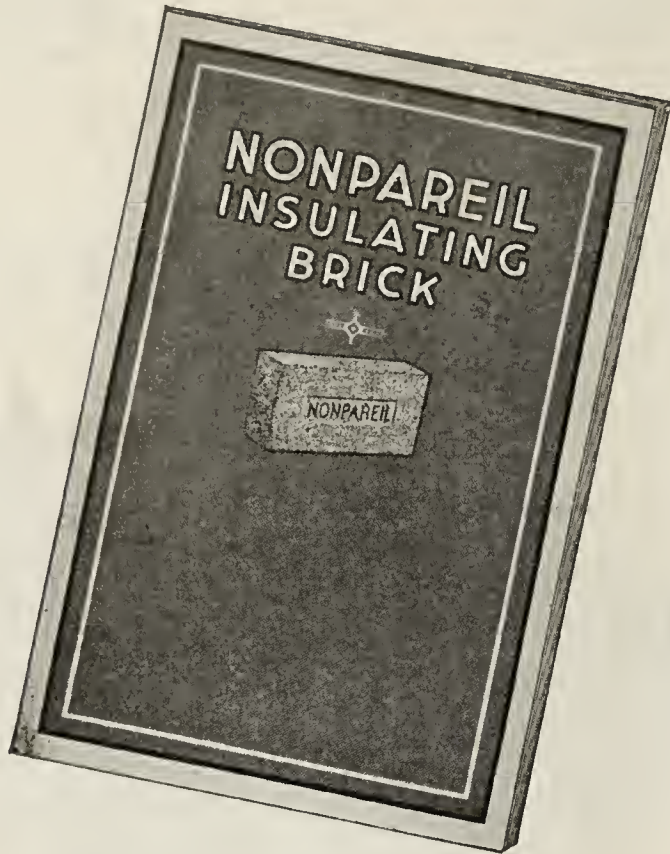
Send for Book No. 201-BC

Goodman Manufacturing Co.

48th to 49th Streets on Halsted

CHICAGO ILLINOIS





“What’s In It for Me?”

IF you are interested in the more efficient and economical operation of your kilns, dryers and boilers, there is a *great deal in this book for you.*

Do you want to reduce fuel consumption without lessening capacity? Do you want to carry more constant and evenly distributed temperatures, and so turn out a more uniform product? It is all a matter of keeping heat where it belongs—inside the apparatus—and it is being accomplished in hundreds of plants using

Nonpareil Insulating Brick

For Kilns and Boiler Settings

Records from these installations, valuable data on heat transmission and conservation, actual demonstration in dollars and cents of the economies of Nonpareil Brick insulation, are some of the contents of this 72-page book that make it well worth your while to send for it.

Without any charge or obligation, a copy of this book, together with a sample brick, will be mailed promptly on request.

Armstrong Cork & Insulation Co.

130 Twenty-Fourth Street : : Pittsburgh, Pa.

Also manufacturers of Nonpareil High Pressure Covering for steam lines, feed water heaters, etc.; Nonpareil Cork Covering for drinking water systems, brine and ammonia lines, and cold pipes and tanks generally; Nonpareil Corkboard Insulation for cold storage and constant temperature rooms; Nonpareil Cork Machinery Isolation for noisy machines, and Linotile and Armstrong's Cork Tile for floors in offices, residences, etc.

hollow tile, and much money and time has been expended by the Alsip Brick, Tile & Lumber Co. in experiments, which in the last few months, have reached a successful conclusion.

This company has installed an entirely new plant for the manufacture of this material in Elmwood, and hollow tile is being produced at this plant sufficient to cope with the demands for this popular building material in Winnipeg and the surrounding country. A large hot air dryer is in course of construction to enable the company to proceed with the manufacture of this tile thruout the winter, and thereby have a large stock on hand to meet the demands of a bumper building year in 1922.

The officers of the company are as follows: W. P. Alsip, president; A. A. Alsip, secretary-treasurer; E. L. Alsip, superintendent and R. G. Graham, general manager.

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

“Free Power”

This is part of the trade mark of the Standard Conveyor Co., and it is what you get when you utilize gravity in their Standard Conveyors.

Recent issues of *Brick and Clay Record* have had much to say about the rewards that 1922 will have for those who reduce their costs, and you will probably agree with the statement that a more general adoption of mechanical methods of handling material and ware in the clay plant would effect big savings. The gravity conveyor particularly reduces expenses, the following letter from the Auburn Brick & Tile Co., Auburn, Iowa, telling of their experience along this line:

“We are glad to comply with your request for a letter stating what our experience has been with our Standard Gravity Conveyor. We have now had it in use only three weeks and, to testify to the satisfaction it has given us may seem a little premature, yet, when we state that we have just placed an order for three more eight foot sections, that should be sufficient evidence of our satisfaction with the equipment.

“You may be interested in knowing that before placing our order for a Standard Conveyor, we entered into a two-year contract with two of our men, whereby they agree to empty our kilns at a contract price that is \$2.00 less than the contract price that was in effect under the old system of emptying kilns.



The Abiline (Tex.) Pressed Brick Co. Uses Standard Conveyors.



Another View of Standard Conveyor Being Used by Abiline Pressed Brick Co.

"We simply bought the machine for them and they repay us in monthly installments out of their earnings. At the present rate they will have machine paid for out of their excess earnings in about eight months' time. They are making about \$12.00 a piece per day while we are effecting a saving of approximately \$50.00 per month, to say nothing of the saving in wear and tear on our kilns and the advantage to us of having the kilns turned oftener. It is possible to work in a hotter kiln by using the conveyor than it is by the wheelbarrow method and less time is lost in bad weather.

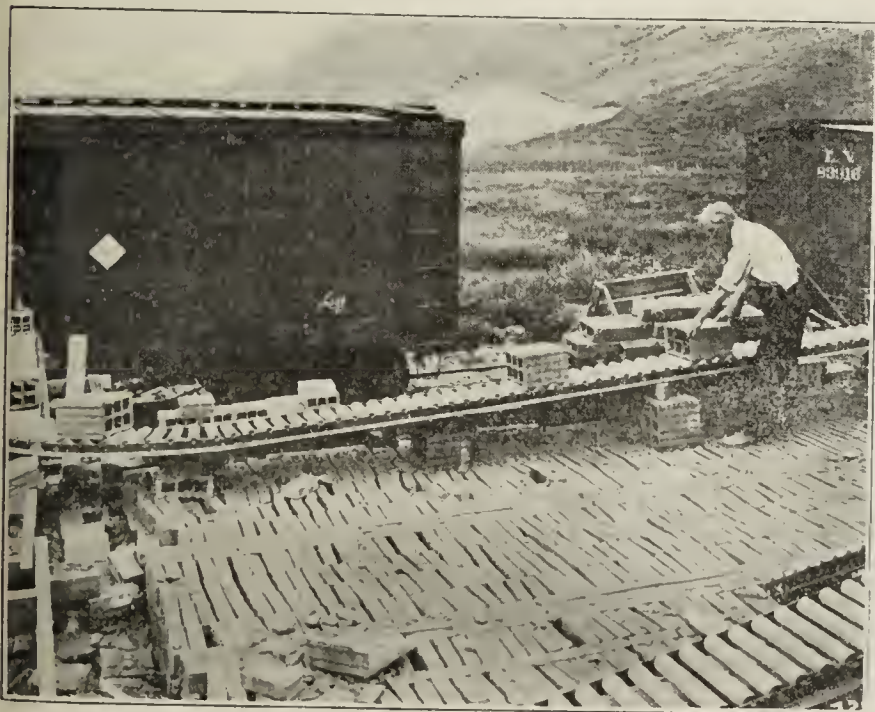
"The carrier is especially efficient in handling Hollow Building Blocks and, while it does not handle the smaller sizes of Drain Tile with as little trouble as it does the building tile, it does as well or better than we expected and we are very well pleased with the investment."

Other users have reported even larger savings, so that the manufacturer interested in reducing costs would do well to investigate the advantages of the Standard Conveyor.

The accompanying illustrations will give you an idea as to the diversity of arrangements the conveyors lend themselves to.

Also readers will be interested in knowing that a more recent change in the construction of the conveyor has not only improved it, but actually reduced the cost. The change may briefly be described as follows: Where they previously used a guard rail which was made of a half-oval bar braced to the side frame at intervals, they now use a wider angle iron at the side, inserting the studs of the bearing in slots near the angle. As stated before, this simplified construction has materially reduced the price per foot of the brick conveyor—the difference amounting to about ten per cent.

The Standard Conveyor Co., whose address is North St. Paul, Minn., will gladly send any additional information desired.



Terra Cotta Brick & Tile Co., San Diego, Calif., Loading Cars with the Aid of the Standard Conveyor.



Cashing In On Dead Weight

The dead weight that is handled by your employees can be easily transformed into motive energy.

Each article will furnish its own power to convey itself from one point to another. Common labor costs will be cut to the minimum and skilled workmen will be kept busy if you will simply decide to let GRAVITY—the universal FREE power, work for you.

To harness gravity in the most efficient and economical way, insist on STANDARD GRAVITY ROLLER CONVEYORS.

Write today and let us send you complete information.

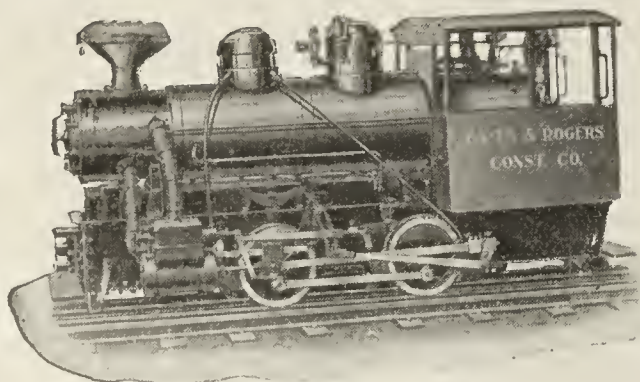
STANDARD CONVEYOR CO.

NORTH SAINT PAUL
MINNESOTA

Brick and Clay Record Buyers' Directory of Manufacturers of Machinery, Equipment and Supplies

See Table of Contents Page for Advertisers' Directory

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POWERFUL—SPEEDY
4 AND 6 WHEEL TYPES
ANY GAUGE

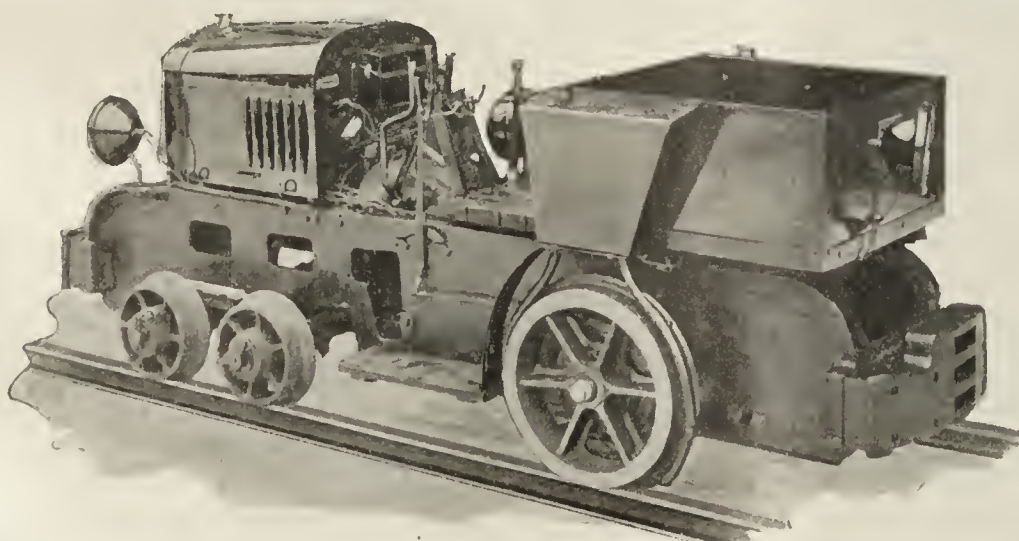
Pulls Heavier Trains on Level Track or Steep Grades

The Davenport Gear Drive Locomotives

will handle your work most successfully

Builders of

ROD AND GEAR DRIVE LOCOMOTIVES
DAVENPORT LOCOMOTIVE WORKS
DAVENPORT, IOWA



APPLIED TO GASOLINE MOTOR HAULAGE

Ford Efficiency

All the advantages of Ford Service, upkeep and efficiency combined in this heavy cast iron motor.

We use new Ford Ton Truck power plant thruout motor, transmission, and overhead worm drive.

In addition;—our special auxiliary reverse transmission giving you the same speeds and pulling power in reverse as forward.

Front pony truck construction makes bad curves easy.

Where loads and grades are not excessive the machine absolutely is in a class by itself, doing all the work of a \$5000 motor at a fraction of the cost.

No matter what your Haulage Proposition—Get the facts from Brookville first.

BROOKVILLE TRUCK & TRACTOR CO.
Brookville, Pa., U. S. A.

A. R. Woolridge, 220 King Street West, Toronto, Canada

BRICK and CLAY RECORD

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

SMOOTHING OUT THE EMPLOYMENT CURVE

HERODOTUS TELLS US that 5,000 years ago Egyptian rulers were struggling with a problem of unemployed labor not unlike that which we are facing today. The Egyptian rulers arrived at the solution of using their idle man-power on government work, canals, reservoirs, temples and pyramids.

Here is a lesson 5,000 years old for the present situation. Public works in the United States and the construction work of public utilities, by systematically putting aside financial reserves during period of prosperity to be used for improvements and expansion during depression, could practically eliminate the recurring periods of business stagnation and the unemployment of labor.

Edward Eyre Hunt, secretary to the President's Conference of Unemployment, in a recent address before the Society of Industrial Engineers, stated:

"A rough calculation indicates that if we maintained a reserve of only ten per cent. of our average annual construction for this purpose, we could almost iron out the fluctuations in employment.

"Unemployment on a vast scale is always a result of business depression. The problem of preventing or mitigating unemployment is, therefore, part of the larger problem of preventing or mitigating alterations of business activity and stagnation.

"The world-wide scope and the long succession of business crises do not prove that the problem of controlling the business cycle is hopeless. . . . The business cycle is marked by peak periods of boom between valleys of depression and unemployment. The peak periods of boom are times of speculation, over-expansion, extravagance in living, relaxation in effort, wasteful expenditure in industry and commerce, with consequent destruction of capital. The valleys are marked by business stagnation, unemployment and suffering. Both of these extremes are vicious, and the vices of the one beget the vices of the other. It is the wastes, the miscalculations, and the maladjustments grown rampant during booms that make inevitable the pain-

ful process of liquidation. The most hopeful way to check the losses and misery of depression is therefore to check the feverish extremes of 'prosperity.' The best time to act is at a fairly early stage in the growth of the boom.

"In any analysis of our productive

I'll Attend Conventions Because:

I need first hand information as to what is going on in the clay industry and the convention is the place to get it.

I need this opportunity to get away from routine business and mingle with those who are doing the big, vital things.

I need a wider viewpoint, a bigger mental horizon to fit into the national scheme of things.

I need to exchange my ideas with those of others. It's the only way to find out whether mine are worth anything.

I need optimism—lots of it—and some real, old pre-war enthusiasm for the year that's ahead.

Therefore be it resolved, that this year's conventions of the various clay products associations are my conventions, and their business is my business, and I'm going to attend.

processes, we can make a broad distinction between our additions to national plant and equipment, such as houses, railroads, manufacturers, and tools on hand, and the consumable goods which we produce on the other. At the present time we increase our activities in both of these directions at the same time and in their competition with each other we produce our booms. If all branches of our public works and the construction work of our public utilities—the railways, the telephones, and so forth—could systematically put aside financial reserves to be provided in times of depressions, we could not only greatly decrease the depth of depressions, but we would at the same time diminish the height of booms. . . Nor is this plan financially impracticable. Under it our plant and equipment would be built in times of lower costs than is now the

case when the contractor competes with consumable goods in overbidding for both material and labor."

Mr. Hunt advocated the formation of adequate statistical service to determine three facts: Volume of production of stocks and consumption of commodities; volume of construction in progress throughout the nation; the actual and not theoretical unemployment. This statistical service should be authorized and carried out by the Government, he believes.

* * *

BUSINESS NEED NOT BE A GAMBLE

CLAY PRODUCTS MANUFACTURERS who are members of trade associations will rejoice at the fair and broad-minded decision given by Judge Carpenter in the Federal District Court of Chicago in the case of the Government vs. The Armstrong Bureau of Related Industries, and principal linseed oil crushers of the country. This decision, which is of vital interest to manufacturers, appears on other pages of this journal together with a timely message from Robert W. Childs of Good, Childs, Bobb & Westcott, counsel for the American Face Brick Association.

Common law and all our codes profess the assumption that all men are innocent until proven guilty. However, those whose duty it is to interpret laws seem to have misread them insofar as they relate to business conduct. Many cases show evidence of the business man being judged guilty until proven innocent. Judge Carpenter in his decision has pointedly declared that modern business is not conducted by a gang of thieves, swindlers or blackguards.

The Sherman Anti-Trust Act, moreover, has been relieved of its most absurd interpretations. Business is told without equivocation that there is no penalty on efficiency. Industry can be competitive without gambling.

The word of warning given by Attorney Robert W. Childs is timely and very well taken. Associations must take care on how to treat the matter of open prices. Some unconscientious trade

1922 Will Reward Those Who

association may overstep the line, and thereby cause the subject to be brought up again, and possibly spoiling the matter for those associations who do interpret the rulings legitimately. A publicity-seeking attorney or commission, such as have recently been creating a stir in New York and Illinois, may quickly take advantage of any opportunity available and wreak havoc with the decision.

We sincerely hope that business men will see the light and that all associations will interpret Judge Carpenter's decision in the proper spirit.



MAKE IT EASIER TO OBTAIN BUILDING LOANS

THERE STILL remains a great impediment to home building—the high price and the scarcity or non-availability of money for loaning on real estate and building mortgages. Other obstacles, such as high labor costs and high prices for building materials, have been cleared to the point that they no longer obstruct the path of a resumption of building.

The small home builder is usually hardest hit because he seldom has more than a very small part of the total required for building a home. When he can obtain money, altho the interest rate may not be high, the commission charge is excessive and almost makes impossible the negotiation of a loan.

The investment dollar invariably goes where it is best treated, and as everyone knows, the municipal, public utility or industrial corporation bond—not the real estate or building mortgage—is now and for a long time has been the investment dollar's most hospitable host. This is true whether viewed from the standpoint of interest return, or that of freedom from burdensome limitations and restrictions. The nub of the matter is that under present conditions the real estate mortgage cannot compete successfully against the well secured bond giving equal or higher return.

The current of industrial money must

be at least in part reversed before building can fully come into its own. The loans should be more easily obtainable on building and at a less cost. Clay products manufacturers should interest themselves in the securing of legislation that will favor, instead of discriminate against, the lending of money on building mortgages, and legislation that will reduce the high cost of loaning.



INTENSIVE ASSOCIATION WORK

THE Refractories Manufacturers' Association about a year ago inaugurated a new feature that might be well adopted by all of the clay products associations. It embodied the founding of several institutes, each one devoting its attention to different features of refractory manufacture. One is the Refractories Accountants' Institute and another is the Superintendents' Institute.

At these meetings only questions concerning accounting or production are considered, and those attending are representatives from the various refractories concerns who hold positions relating to these subjects. Naturally topics under discussion at these institute meetings are given more thought than when considered in a general meeting.

Other national organizations have taken similar steps, for instance, The American Gas Association at its convention held early in November had an executive section, an accounting section, a commercial section, a manufacturers' section and a technical section. This specialization of division of association work in sections or institutes raises the efficiency and benefits derived from such meetings.

The division of trade association work into sections or institutes similar to those outlined above will naturally enlarge the scope and benefit to its members and if properly handled we do not believe it will interfere with the effectiveness and strength of the main body.

DON'T GIVE UP CLAY PRODUCTS' PUBLICITY

ADVERTISING is much like a race, except that in industry, business is one race after another. Many a participant in a race drops out before the goal is reached and fails to place simply because he lacks nerve or vision. He does not realize that his competitors are perhaps just as exhausted as he is and may be forced to drop out of the struggle that he may finish in a favorable position, if he has perseverance and will stick it out.

Similarly, many manufacturers have fallen flat on their advertising campaigns, simply because they failed to stick to it and often the fruit of their efforts was almost within their grasp, but was lost due to the giving up of the pace. This is a serious mistake, but it is the story of many a concern.

The various clay products associations have been carrying on during the past few years splendid advertising campaigns that have long been waiting, and which have already begun to produce highly satisfactory results. We believe full benefit has not yet been felt, and will not for several years to come.

The request for literature at the American Face Brick Association offices, which at the present time is tremendous, shows a genuine interest in home building where clay products are used as the building material. We believe that next year will be a year of great activity in residence construction, and that brick houses will form a greater percentage of the total construction than heretofore—that is, if the present advertising campaigns are kept up.

It most obviously would be a serious mistake if any of the trade associations in the clay products industry decided to discontinue their publicity program at this time. It would be like the runner who quit the race when he had but a few yards to go to reach the goal.

The final oral argument for the famous freight rate case of the brick and tile associations was presented to the Examiner for the Interstate Commerce Commission on November 10 and 12. Francis B. James, attorney for the clay products associations represented, tells what happened at this meeting in an article to appear in the November 29 issue of "Brick and Clay Record."

Have Reduced Their Costs!

BIG SURPRISES *in* STORE *for* A. F. B. A. DELEGATES

Mysterious Silence Prevails at Association Headquarters Regarding Convention Program — Record Crowd Expected to Attend Great Convention

IF THE DEGREE OF MYSTERY is a measure of the attractiveness or caliber of the program for this year's convention of the American Face Brick Association, it should be the most successful in the history of that organization. The offices of the American Face Brick Association are shrouded in the deepest mystery regarding the program for the forthcoming convention, and a knowing smile, an air of "important events to come," is all the response that greets the questions of the seeker for information.

We wandered into the Association offices the other day and sought out the eminent and revered secretary, Mr. Hollowell.

"Mr. Hollowell, what will be doing at White Sulphur Springs this year?"

OFFICIAL MAINTAINS SECRECY

"We're going to have a real program this year. It's going to be of the greatest interest to the members and we anticipate one of the greatest crowds we ever had at an annual meeting."

And that's all that could be gotten from him.

Next we tackled Mr. Baldwin, division secretary, who knows much of the inside dope.

"What's the program for the convention this year, Baldwin?"

"Man, we're going to have a real program this year. It's going to be of the greatest interest to the members and we" Realizing that the answer was going to be the same as that evinced by Mr. Hollowell, we hurried over to Mr. Price, office manager, who had seen us and was just putting on his hat and coat.

"Price, what do you know?"

"Why, we're going to have a real program this year. It's going to be" Nothing doing here, so we next hurried over to G. C. Mars' desk, but that gentleman had escaped!

TO BE MOMENTOUS MEETING

So, dear reader, we have nothing definite to tell you about what is in store for you at the A. F. B. A. convention, which

In Beauty There is Nothing Lacking
at White Sulphur Springs as These
Two Photos of the Hotel Greenbrier
Prove.



is scheduled at White Sulphur Springs, W. Va. on Wednesday, Thursday, Friday, November 30, December 1 and 2.

We do know, however, that every effort is being spent to make this one of the most momentous meetings ever held by a trade association, and that every manufacturer of face brick who fails to attend will be missing something that is vital to the future conduct of his business.

While in the main the program, as customary, will be divided into three formal sessions, one each day, there will be additional features of interest to every individual. Secretary Hollo-

well says he is planning a big surprise for the membership, and we know he has something big up his sleeve.

The Greenbrier Hotel is operated on the European plan, but special arrangements have been made for those attending the convention whereby American plan rates will be in effect.



A Front View of the Splendid Hotel Greenbrier at White Sulphur Springs.

The cuisine at the Greenbrier is of the same quality you get at the most luxurious city hotels. A table d' hote bill-of-fare will be offered to the convention delegates.

ROOMS CAN BE HAD FOR \$9

The rates are: For a room sharing a bath with another room, \$9, which means that if two persons occupy a double

A room without bath, except public bath, is charged for at the rate of \$8.

A \$12 rate applies to one person having a single room and bath.

Practically all rooms have toilet and lavatory facilities in addition to either private or connecting bath. All rooms at the Greenbrier are magnificently furnished—and all are outside rooms. Those who have been to White Sulphur and know the conditions say that these rates are unusually reasonable, and that every guest will be absolutely satisfied.

MAKE RESERVATIONS AT ONCE

All persons are strongly urged to make hotel reservations at once, either thru direct contact with the hotel or thru Secretary Hollowell. The majority of those attending will reach White Sulphur on the morning of November 30 at or about the same time, and the hotel will be ready immediately for those who have made reservations.

Manufacturers of face brick who are not members of the

No. 1 C. & O. Penn'a	No. 3 C. & O. Penn'a	No. 5 C. & O. Penn'a	(E. T. Huntington and East) (C. T. West of Huntington)	No. 4 C. & O. Penn'a	No. 4 C. & O. B. & O.	No. 2 C. & O. Penn'a	No. 6 C. & O. Penn'a
PM	PM	AM		PM	PM	PM	AM
* 2 05	* 3 40	* 8 10	Lv. New York (Penna. Sta.) Ar	11 10	10 30	2 40	6 55
2 00	3 30	8 00	Lv. New York (Hud. T'm'l) Ar	11 10	10 30	2 40	7 04
3 23	5 04	9 28	Lv. Trenton Ar	9 46		x 1 13	x 5 25
4 07	5 40		Lv. North Philadelphia Ar			x 12 35	x 4 46
4 13	5 56	10 32	Lv. West Philadelphia Ar	8 35		12 20	4 30
		10 27	Lv. Philadelphia Ar	8 40	8 04		
4 55	6 35	11 13	Lv. Wilmington Ar	8 01	7 28	b 11 45	3 49
6 30	8 30	12 55	Lv. Baltimore Ar	6 30	5 50	10 05	1 55
7 30	9 30	1 50	Ar. Washington Lv	* 5 30	* 5 00	* 9 05	* 1 00
* 9 15	* 10 15	* 2 00	Lv. Washington (C. & O.) Ar	4 45		7 25	12 25
12 10	12 55	4 35	Ar. Gordonsville Ar	1 50		4 25	9 35
1 00	1 45	5 20	Ar. Charlottesville Ar	1 05		3 40	8 50
2 15	2 55	6 31	Ar. Basic Ar	12 03		2 38	7 52
2 40	3 23	7 05	Ar. Staunton Ar	11 38		2 13	7 25
5 00	5 30	8 50	Ar. Clifton Forge Ar	9 50		12 25	5 35
5 45	6 15	9 30	Ar. Covington Lv	9 20		11 55	5 10
7 40	7 40	10 55	Ar. Hot Springs Lv	7 50		7 45	3 45
		7 45	Lv. Hot Springs Ar	10 55			
5 45	6 15	9 30	Lv. Covington Ar	9 20		11 55	5 10
6 35	7 05	10 20	Ar. White Sulphur Ar	8 35		11 05	4 25
8 15	8 40	11 55	Ar. Hinton Lv	7 10		9 45	3 00
9 25	9 50	1 00	Ar. Thurmond Lv	6 05		8 45	1 55
11 30	11 50	3 05	Ar. Charleston Lv	4 05		6 40	11 55
1 05	1 20	4 30	Ar (E.T.) Huntington (E.T.) Lv	2 50		5 20	* 10 40
	1 20	4 30	Ar (C.T.) Ashland (C.T.) Lv	1 00		3 30	
	5 05	8 20	Ar. Winchester Lv	9 18		11 50	
	5 40	8 55	Ar. Lexington Lv	8 45		11 15	
	6 42	10 00	Ar. Frankfort Lv	7 40		10 11	
	8 25	11 45	Ar. Louisville Lv	6 00		8 30	
	1 20	4 30	Lv. Ashland Ar	1 00		3 30	
	5 40	8 40	Ar. Cincinnati Lv	* 9 00		* 11 30	
	PM	AM		PM		AM	

Section of Time-table Showing Train Connections to A. F. B. A. Meeting Place.

A. F. B. A. are cordially welcomed to the meeting, as are also face brick dealers.

White Sulphur is on the main line of the C. & O. R. R., 353 miles east of Cincinnati and 246 miles west of Washington. The C. & O. has made special arrangements to comfortably accommodate all who attend the meeting, provided Pullman reservations are made two or three days prior to the date of movement. Thru cars are arranged for from New York and Chicago to White Sulphur Springs, and more cars will be added as necessary.

WHERE TO GET PULLMAN TRANSPORTATION

Reservations should be made for Pullman tickets thru the following persons, according to the point of origin of the passenger.

Cincinnati, Ohio—T. H. Gurney, assistant general passenger agent, C. & O. R. R.

Louisville, Ky.—R. E. Parsons, district passenger agent, C. & O. R. R., 42 Todd Building.

Chicago—Consolidated Ticket Office, Insurance Exchange Building.

New York City—O. N. Spain, eastern passenger agent, C. & O. R. R., 299 Broadway.

Washington, D. C.—O. N. Spain, eastern passenger agent, C. & O. R. R., 714 Fourteenth Street, N. W.

There will be in effect round trip tickets to White Sulphur

No. 47	No. 41-1	No. 41-3	No. 45-5	(E. T. Huntington and East) (C. T. West of Huntington)	No. 4-44	No. 2-42	No. 46
PM	PM	PM	AM		PM	AM	PM
* 12 30	* 4 00	* 4 00	* 9 00	Lv. Norfolk Ar	7 05	11 55	2 55
	4 15	4 15	9 15	Lv. Old Point Ar	6 40	11 30	
1 30	5 00	5 00	10 00	Lv. Newport News Ar	6 00	10 50	1 50
1 56	5 26	5 26	10 26	Lv. Lee Hall Ar	5 30	10 20	1 20
2 13	5 43	5 43	10 43	Lv. Williamsburg Ar	5 15	10 05	1 05
3 20	6 50	6 50	11 50	Ar. Richmond Lv	4 10	9 00	* 12 00
PM	9 30	9 30	1 00	Lv. Richmond Ar	4 00	8 30	Noon
	12 15	12 15	3 40	Ar. Gordonsville Lv	2 00	5 30	
	1 05	1 05	4 35	Ar. Charlottesville Lv	1 10	4 45	
	2 15	2 55	6 31	Ar. Basic Lv	12 03	2 38	
	2 40	3 23	7 05	Ar. Staunton Lv	11 38	2 13	
	5 00	5 30	8 50	Ar. Clifton Forge Lv	10 00	12 35	
	5 45	6 15	9 30	Ar. Covington Lv	9 20	11 55	
	7 40	7 40	10 55	Ar. Hot Springs Lv	7 50	7 45	
			7 45	Lv. Hot Springs Ar	10 55		
	5 45	6 15	9 30	Lv. Covington Ar	9 20	11 55	
	6 35	7 05	10 20	Ar. White Sulphur Lv	8 35	11 05	
	7 00	7 30	10 45	Ar. Ronceverte Lv	8 15	10 45	
	8 15	8 40	11 55	Ar. Hinton Lv	7 10	9 45	
	9 25	9 50	1 00	Ar. Thurmond Lv	6 05	8 45	
	11 30	11 50	3 05	Ar. Charleston Lv	4 05	6 40	
	1 05	1 20	4 30	Ar (E.T.) Huntington (E.T.) Lv	2 50	5 20	
		1 20	4 30	Ar (C.T.) Ashland (C.T.) Lv	1 00	3 30	
		5 05	8 20	Ar. Winchester Lv	9 18	11 50	
		5 40	8 55	Ar. Lexington Lv	8 45	11 15	
		6 42	10 00	Ar. Frankfort Lv	7 40	10 11	
		8 25	11 45	Ar. Louisville Lv	6 00	8 30	
		1 20	4 30	Lv. Ashland Ar	1 00	3 30	
		5 40	8 40	Ar. Cincinnati Lv	* 9 00	* 11 30	
PM	Noon	PM	AM		PM	AM	PM
11 45	12 00	9 45	9 00	Lv. Cincinnati (Big 4) Ar	8 50	7 55	6 15
2 25	2 35	12 30	11 50	Ar. Indianapolis Lv	6 05	5 05	3 10
7 50	8 15	7 05	5 35	Ar. Chicago Lv	12 50	11 40	* 8 55
		7 40	7 10	Ar. Peoria Lv	11 05	8 30	7 00
			6 25	Ar. East St. Louis Lv	12 18		
		7 45	6 45	Ar. St. Louis Lv	* 12 00	* 10 00	* 8 25

Consult Above for Trains to White Sulphur Springs.

room with bath each person is charged \$9; or if two single rooms with a connecting bath is had each person pays \$9; or a double room and a single room having a bath between and occupied by three persons, \$9 per person is the rate.

Springs from most of the prominent junction points in the country. It is suggested that members get in touch with local

at every station, they can be gotten at some junction point on the way.

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CONNECTIONS AT CINCINNATI									
"BIG FOUR"(C. C. C. & St. L. RY.)									
Noon	PM	PM	AM				PM	PM	AM
*12 00	*11 45	*9 45	9 00	Lv Cincinnati	Ar		6 15	8 50	7 55
2 35	2 25	12 30	11 50	Ar Indianapolis	Lv		3 10	6 05	5 05
8 15	7 50	7 05	5 35	Ar Chicago	Lv		8 55	12 50	11 40
		7 40	7 10	Ar Peoria	Lv		7 00	11 05	8 30
			6 25	Ar East St. Louis	Lv			12 18	
8 55		7 45	6 45	Ar St. Louis	Lv		8 25	*12 00	*10 00
PENN. SYSTEM									
	PM			Lv Cincinnati	Ar	PM	AM		
	*9 10			Ar Chicago	Lv	6 00	7 12		
	7 20					*9 30	*9 20		
B. & O. R. R.									
	PM	AM		Lv Cincinnati	Ar	PM	AM		
	*9 15	*8 50		Ar St. Louis	Lv	7 40	7 20		
	7 45	6 15				*10 00	*9 30		

Those Who Must Change at Cincinnati for White Sulphur Springs, Consult Above.

railroad passenger agents with a view of obtaining quotations on round trip tickets. If round trip rates are not obtainable

A. S. T. M. Book On Tentative Standards

The annual book of the American Society for Testing Materials on "Tentative Standards" has just come off the press and contains much of interest to the clay products manufacturer. Among 127 tentative standards listed in the book, 23 relate to clay products, cement, lime and gypsum. The book of tentative standards is published with a view to eliciting criticism before final action is taken toward the adoption of such tentative standards by formal action of the Society.

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You will want to attend the meeting of the Common Brick Manufacturers' Association this year because Secretary Stoddard has a great surprise in store for the members.



VIEWS of SMALL TOWN DEALER on HANDLING FACE BRICK

REGARDING THE POLICY of dealer distribution by manufacturers, there always have been many different views and many points of argument by both factors, the dealer and the manufacturer. There are some firms who advocate dealer distribution but balk at the 100 per cent. policy of marketing thru the dealer only. Then there is another problem in marketing clay products in small towns, towns where the building is practically controlled by the inevitable lumber dealer.

Manufacturers of clay products will be interested to know what a dealer in a small town, with years of experience in handling building materials, has to say regarding the question of dealer distribution. W. F. Spangler, of Churubusco, Ind., has been a strong champion of dealer distribution. Until recently he was secretary-treasurer of the Spangler & Grouleff Lumber Co., in Churubusco, but has now made other business arrangements. In "Building Supply News", issue of September 27, 1921, Mr. Spangler has the following to say:

MANUFACTURERS DID NOT COOPERATE

"For a long time we felt that it was unprofitable to handle face brick in a town as small as ours, the population of which is about one thousand. Another reason we never tried to purchase face brick was because we always found that the manufacturers did not cooperate with us. It seemed they would rather have their salesmen call on the trade direct, go to greater expense in selling this way, risk their chances at collecting the bill after goods were delivered, than to allow the dealer a little margin for the service he could render to them in a more satisfactory manner.

"I have heard that the brick manufacturers are of the opinion that the retail dealer is not a salesman and that he could not develop business. I am sure I could convince these manufacturers they were never more mistaken about anything than they are about that. In fact, the dealer has it all over the manufacturer as a salesman when it comes to dealing direct with the consumer. He knows conditions, as well as the peculiarities of the customer, and with very few exceptions is a live wire and willing to give his time and money in personal service and advertising to push any line, if the producer of that line will meet him half way in regard to profit and protection.

"In my own case, for instance, we tried a number of times to cooperate with manufacturers in the sale of brick requesting

them to send on their samples but to keep their salesmen at home. They are all right to deal with business men, but when it comes to dealing with the farmer, they are all at sea.

THE RESULT OF ONE PRODUCER'S COOPERATION

"In every instance we found it did not pay, until finally we got in touch with a certain brick company in the central west, which allowed us to handle a deal on a building in our town in our own way. We sold the brick at a satisfactory margin. Then we ordered enough to keep a small stock in our yard. We built panels showing how the brick would look when laid in the wall. The following year we sold a schoolhouse and then finally a church job and some 20 or 30 small jobs, such as chimneys, porches, etc. Since that time we have had a very nice business in face brick at a satisfactory profit.

"We feel that this concern has treated us fair in every way and have cooperated with us in declining to quote direct and referring inquiries to us. Their cooperation has enabled us to build up a substantial face brick business.

"I believe if other manufacturers of face brick would take the attitude toward the dealer that these people do, and allow him a little profit to handle their product, they would find the dealer to be a real salesman and that there would be more brick structures erected than there ever have been before. I used to talk anything but brick for the reason that the profit was in other products.

"I hope this will assist face brick manufacturers to realize that in the past they have not been able to see thru a ladder."

DISPLAYING FACE BRICK SUCCESSFULLY

"This," says "Building Supply News," "sums up the status of the face brick business from the dealer viewpoint. The real need, as can be plainly seen, is practical cooperation on the part of both dealer and producer. Mutual success can not be attained, or even expected, without a definite understanding of each other's problems.

"Mr. Spangler stated that his firm built up panels of face brick to show prospects just how a completed wall of various kinds of brick would look. The Spangler & Grouleff Lumber Co. has dispensed with these panels. Instead, they rely upon some of the jobs, for which they have supplied brick, as their samples in convincing an undecided customer to use face brick."

of Current Interest

Little Pigs." The story is written in the form of poetry and well illustrated for the children's interest. It teaches the child the value of the qualities of brick in construction.

This book is being distributed to members at six cents per copy, with the member's name printed on the inside back cover,



FREE Xmas Book For Every Child

It's a famous Mother Goose book—handsomely illustrated in four colors. Printed in large, easily read type. The little ones will get hours of enjoyment out of it.

This book is being given away absolutely free to every child who calls at our office or writes us before Christmas day. Call or send today for your copy before our supply is exhausted.

[Name and Address of Brick Manufacturer to go here]

Advertisement to be Used by Manufacturers in Connection with New C. B. M. A. Booklet, "The Three Little Pigs."

in quantities of 100 or more, and is also available for members of the American Face Brick Association. The members of the C. B. M. A. will also be provided with electrotypes, if they so desire, for local newspaper advertising during the holidays, so that the books can be gotten into the hands of the kiddies.

Argue Freight Rate Case Before I. C. C.

On November 10 and 12 attorneys for the National Paving Brick Manufacturers Association, American Face Brick Association and Hollow Building Tile Association argued the freight rate case before the I. C. C. The tentative report of the Examiner was assailed and its fallacies pointed out. As yet no decision has been made either for or against the complainants.

The report of attorney Francis B. James on the arguments will be printed in the next issue of *Brick and Clay Record*.

N. B. M. A. Annual to Be Held in Indianapolis

Announcement has been made that the 36th annual convention of the National Brick Manufacturers' Association will be held in Indianapolis, Ind., during the week of January 23-28, 1922. It will be remembered that this organization held its annual meeting in that same city in 1918. Headquarters of the association will be at the Claypool Hotel, which was also the headquarters for the 1918 convention, and which is a first-class hotel.

Those desiring further information relative to the program, which is now in course of preparation, the requisites of membership or any other particulars, are requested to address the secretary of the association at Indianapolis.

Towing Cost in Hudson River Brick District

As an instance of how costs have increased to the manufacturer in the Hudson River district, Colonel John B. Rose states that the tow cost from Haverstraw Bay, N. Y., in 1910 was \$37.56 per barge. In 1919, with 20 per cent. added for coal and

other advance charges, it was \$192 per barge. Towing from Newburgh Bay was \$60 per barge, and this was advanced to \$248. In Kingston it was \$75, which was increased to \$348. Up-river was formerly \$90, and has been raised to \$480.

Iowa Clay Men to Confer With State College

President Grover C. Galvin, of the Iowa Clay Products Manufacturers' Association has appointed a committee which is to confer with the Ceramic Department of Iowa State College regarding the program of work to be followed out by the department with reference to clay products. A meeting is scheduled in the near future.

Kentucky Clay Men Planning Meeting

The Kentucky Clay Products Association is planning to hold its next meeting just prior to the annual meeting at Indianapolis of the National Brick Manufacturers' Association. A plan is now being discussed for holding the Kentucky meeting in Louisville, and going in a body to Indianapolis for the national.

Enormous Sums Needed for War Purposes

At this time while the universal subject and topic uppermost in the minds of all nations is the reduction of armaments it is certainly interesting and astounding to learn what percentage of the government's appropriations go for war purposes as compared to other purposes. During the fiscal year ending July 1, 1921, a total of more than \$3,750,000,000 was appropriated and these appropriations are divided under the following headings:

Obligations Arising from World War.....	52.2 per cent.
Postal Service	11.0 per cent.
Naval Department	9.5 per cent.
War Department	8.8 per cent.
Obligations from Previous Wars.....	7.0 per cent.
Public Works	4.7 per cent.
Primary Functions of Government.....	3.9 per cent.
Miscellaneous	2.9 per cent.

In short, 77½ per cent. for war purposes and 22½ per cent. for all other purposes.

58 Separate Operations to Make Brick

Colonel John B. Rose, formerly a brick manufacturer in the Hudson River district and well known in the industry, in an address before the New York Building Congress recently, explained that in the manufacture of brick 58 separate operations are required, a fact which is not generally known.

Unemployment Reduced 1,000,000

One of the brightest things indicating the return of industry and the country to the much hoped for normalcy is the report recently made public that unemployment has been decreased 1,000,000. The latest figures published show a total of 3,000,000 still out of employment.

NO PENALTY *on* EFFICIENCY —BUSINESS *is* TOLD

Judge Carpenter, Federal District Court of Chicago, Gives Decision of Great Moment on Open Price Plan Favorable to All Business Men

IN THIS CASE the United States, pursuant to the powers and duties imposed upon it by the Sherman Anti-Trust Act, challenged as a combination or conspiracy a contract between the defendants, linseed oil crushers, and the Armstrong Bureau.

The defendant, Julian Armstrong, in October, 1918, organized the Linseed Oil Council and operated it as a member of the Armstrong Bureau. The purpose of the Council and Bureau was to collect and furnish to the various members current quotations on linseed oil, the record of sales of oil, including prices, statistics as to stock on hand, crop conditions at home and abroad, and other information of interest or value to the manufacturers of linseed oil. The Armstrong Bureau entered into contracts with certain of the defendants and agreed to furnish them the foregoing information for a consideration.

Pursuant to these contracts the various subscribers daily reported their price lists to the Bureau, and promptly sent word of any change. Other information was also furnished from time to time. The statements received and collected by the Bureau were immediately sent out to all the members of the association.

DISTRIBUTED ACCURATE INFORMATION

The record discloses that the information collected and distributed by the Bureau to its several members was of the kind which a sagacious business man secures, or endeavors to secure, in the operation of his enterprise. The information was true. The price lists furnished were made in the regular course of business, and offered in good faith to customers or prospective customers. There was no proof that the members of the association ever, at the Bureau meetings or at any other place, discussed prices or made agreements with respect to prices, and there was no evidence that the prices asked by any of the subscribers were not in accordance with the market price of flaxseed, upon which the price of linseed oil was based.

Production was not limited during the period the Bureau was in operation. There was no proof of division of territory. There was no proof that the prices asked by the individual defendants were not fixed by them upon their own judgment, considering all factors affecting supply and demand. There was no proof showing that any member was under the slightest obligation or constraint to ask higher prices or maintain prices.

ARGUMENT FOR U. S. NOT VERY CLEAR

The main argument for the United States is that the operation of the Bureau tended toward a stabilization or uniformity of price on any given day, which was not due to competition, in accordance with economic law.

Many tables of statistics were offered in evidence and read to the Court, from which there appeared at times a striking similarity in price, and that changes in prices were made by substantially all the members coincidentally.

It appears further that the price of linseed oil is controlled by the price of flaxseed, and that the flaxseed market is an

open one in which there are wide fluctuations as well as inactive periods.

The government has not shown that there was artificial regulation of price, either by definite oral or written agreement or by tacit understanding.

Each individual crusher entering into a contract with the Armstrong Bureau specifically and expressly agreed that all information reported to the Bureau or distributed by it, should at all times be purely statistical and pertain only to past operations, and that the Bureau should not be used to enable the constituent members to fix prices for the sale of linseed oil, cake or meal; to limit the sale, production or manufacture thereof, or to divide the territory in which it was to be sold.

MUST PROVE RESTRAINT OF TRADE

It is incumbent upon the government to show by the clear preponderance of the evidence that the defendants conspired to restrain interstate commerce. In the absence of direct proof of actual entering into of such a combination, and in the face of the denial under oath of the defendants that any such conspiracy or combination was entered into or made, the government must show that what the defendants did necessarily had the result of restraining trade, or, if it relies upon the circumstantial evidence to show that a conspiracy was actually entered into, it must show to the satisfaction of the court that the circumstances upon which reliance is placed are entirely inconsistent with supposition of innocence.

The question involved is whether an association, such as the Armstrong Agency (sometimes called the Open Price Plan) is obnoxious to the anti-trust laws, whether or not there is anything inherently wrong in an agreement between producers in a certain line to furnish each other their prices and not to make any sale deviating from the price-list without immediately notifying all the others.

ARMSTRONG BUREAU GAVE OUT PRICE LISTS

Associations of merchants and manufacturers, boards of trade and exchanges are of great antiquity. Evidently such associations were not aimed at by the Sherman Act, because they are not mentioned in the act. A distinction is sought to be drawn between the operations of an exchange and what was done by the defendants thru the Armstrong Bureau. An exchange sends out reports of actual sales. The Armstrong Bureau gave out price-lists. It is difficult to understand any ground for declaring one legal and the other illegal. Every producer or merchant desires to obtain for his goods the highest price he can get. The price which he charges is always the highest which he believes the traffic will bear. He cannot charge, ordinarily, more than his competitors. His competitors' price fixes the point above which he cannot go. When the merchant fixes the price at the level of his competitors he is fixing it in competition with his rival just as much as tho he had named a lower price. The competition of his rival has prevented him from charging a higher price. If, on the other

hand, he finds that he cannot move his goods at the price fixed by his competitors he will naturally lower the price and this will establish a new level. This is the essence of which constitutes competition.

HOW MARKET VALUE IS ESTABLISHED

Quotations established by the sales on an exchange establish the market value at the time of the sale, but not the market value the day after. The prices at which goods are offered for sale at any moment establish the market value at that moment.

In those lines of merchandising where there are no exchanges, the prices which producers and dealers put upon their goods constitute the market price. *Cliquot's Champagne*, 3 Wall, 114. In the trial of that case the judge charged the jury as follows:

"The market value of goods is the price at which the owner of the goods, or the producers, holds them for sale; the price at which they are freely offered in the market to all the world; such price as dealers in the goods are willing to receive, and purchasers are made to pay, when the goods are bought and sold in the ordinary course of trade."

This charge was approved by the Supreme Court.

The above language was cited and approved by the Supreme Court in *Muser vs. Magone*, 155 U. S., 240, at page 249.

THE JUDGES' RULING

If it is lawful for dealers to get together in an exchange and provide for a dissemination of the prices obtained on actual sales, why should it be unlawful for those producers and dealers in lines where no public exchange had been established, to make some provision for disseminating information of market value or prices? To put it in another way, why should they be limited to the dissemination of the market prices of yesterday, but not those of today?

In order to obtain efficiency in business, as well as in any other human activity, it is necessary to have reliable, immediate and adequate records. With the progress that has been made in the last century it is not to be expected that business alone stood still.

NEW ERA IN BUSINESS

In the old days when at noon the business men of the community met in the village blacksmith shop, or in the evening met at the corner grocery, a man was supposed to carry in his

head all the facts in regard to his business and never to disclose them to a competitor. Adequate systems of accounting had not been devised. Overhead as a cost element in operation was unheard of. Business was run by the rule of thumb. Such days have gone by. The commercial enterprise today which is not so managed that its head can at any time know how large is his stock, the volume of his sales, the cost of his operation, and the amount of his profit and loss, sooner or later will be distanced by his competitors.

It is because business is so much more complex, the volume so much greater, the margin of profit on single transactions so much less, that the merchants of today must have at instant command reliable and adequate information, immediately to be secured and more or less permanent in form. Business is no longer a game of chance, but a matter of scientific calculation.

KNOWLEDGE OF MARKET PRICES IMPERATIVE

A merchant cannot compete with another merchant unless he knows what he must compete against. A knowledge of what his competitor is charging is the first step in competition. It does not follow because one man knows the price which his competitor is asking, and he then fixes the same price, that his action is by agreement. If his competitor charges a high price he naturally will ask the same price if he thinks he can get it. It is absurd to imagine that every merchant does not endeavor to keep posted on the prices asked by his competitor. If he fails to keep posted he will find himself losing money. If his prices are too high his customers leave him. If too low, he fails to reap the profit to which he is entitled. The government cannot seriously contend that it is the duty of every merchant to guard against his competitor finding out what he is charging. It would be an impossibility. Nor is it wrong for a merchant to endeavor to find out what his rivals are charging. If he cannot get it directly and easily, he will necessarily get it indirectly and at a great expense and slowly. He must know in order to conduct his business properly; nor does the public profit by the mistakes of a merchant charging too much on the one hand or too little on the other, for want of such information. The mistakes would in all probability fall equally on either side.

UNIFORM PRICE DOES NOT PROVE CONSPIRACY

Quick and accurate information of what his competitors are charging naturally leads to uniformity in prices. But because

A. F. B. A. COUNSEL, R. W. CHILDS' ADVICE

Judge George A. Carpenter in the American Linseed Oil case has clarified the atmosphere as to the rights of business men in their trade association activities in a clear, clean cut decision. The legality of the so-called "Open Price Plan," uncontaminated with evidence of efforts to fix prices, divide territory, limit production, or other practices which would tend to restrict competition or restrain trade, was squarely before the Court, and he held that because a group of producers engaged in the same line of business is exchanging, thru a central agency, trade information pertaining to sales, prices charged and stock on hand they are not necessarily agreeing on prices or violating the Anti-Trust Law. The Court very aptly said: "It does not follow that because one man knows the price which his competitor is asking and he then fixes the same price, that his action is by agreement."

"A uniformity of price does not prove an agreement."

The Court fails to find any substantial difference between this



ROBERT W. CHILDS.

plan of distributing statistical data and the plan followed by boards of trade and exchanges, and comes to the conclusion that it is proper for producers engaged in lines of business where no public exchange has been established to provide a plan for disseminating information as to prices and other statistical data of interest and benefit to the trade.

There has been so much said about "unreasonable" and "reasonable," "due" and "undue," "direct" and "indirect" restraints of trade that it is most refreshing to read an opinion which logically and clearly tells a business man what he can lawfully do.

But in reading this opinion it should be remembered that it gives no broader rights than existed prior to its being handed down, and any scheme or plan, whether it be called the

"Open Price Plan" or any other name, which has for its object the restriction of competition, fixing of prices, or the division of territory, will receive the condemnation of the courts.

one merchant charges the same price that the other merchant charges because he finds that he can get it, does not necessarily indicate that there is any agreement between them to charge the same price. As the Supreme Court said, in the Steel Case, a uniformity in price does not prove a conspiracy.

What applies to sales for present delivery, applies equally to sales for future delivery.

Much has been made by counsel for the government of the fact that prices of oil went up along with the price of flaxseed; that afterwards when flaxseed declined sharply, the price of oil did not come down at the same rate, but declined at a much slower pace. The court will take judicial knowledge that for the past several months a decline in prices has been going on.

SLOW PRICE DECLINE NATURAL

The government has failed to show that the phenomenon of the price of oil declining at a slower rate than the price of flaxseed was not common in other lines, where the price of the raw materials has fallen. That the price of the finished product on a declining market will fall at a slower rate than the price of the raw material is natural, and therefore expected. The price of the finished material under conceded economic rules in the market where there is competition, will depend upon the supply and demand of the finished material. The drop in the price of the raw material does not affect the supply of the finished material. Time must elapse before the supply of finished material is increased by the low prices of raw material, and until a supply of finished material is increased, assuming that the demand remains constant, no decline in price may be expected. When the price of raw material starts to go up, less of the finished material will be produced, and stoppage or slowing up of the manufacture of the finished material will be at once reflected in an increased price.

The court should not construe the acts of the defendants to be illegal when it can, with equal facility ascribe them to an innocent intention.

BUREAU HAD STABILIZING EFFECT ON PRICES

But it is charged by the government that the defendants themselves claim that the effect of the Bureau was to stabilize prices. That is to say, as a result of accurate and instant knowledge on the part of producers, the price of linseed oil instead of varying sharply from day to day, as shown by the sales made, assumed an average price without the deviations. If these deviations before had been the result of real competition, based on accurate knowledge by the producers of the real market conditions, then the government is far from sustaining its contentions. The defendants, however, have shown, and their evidence is uncontradicted, that the deviations before existing were caused by the individual producers endeavoring to meet prices of their competitors which had never been made; and it is common in the trade for buyers to make false representations as to the prices made by other producers. Surely, such a condition is not the one that the Sherman Act aims to foster.

SAYS "STABILIZED MARKET" MEANS UNIFORM PRICE

The government was greatly disturbed by a statement in the defendant Ferry's books that the Armstrong Bureau brought about a stabilized market. This expression seems to have been a great bugaboo. Counsel for plaintiff would have the court believe that the term "stabilized market" means nothing other than uniform prices. Whatever the proper definition of the phrase, the record does not show that there was a stabilization or uniformity in prices.

The defendants contend, and I agree, that the term "stabilized market" means the obtaining and distributing of any accurate information that would enable crushers and buyers of linseed oil the better to understand the conditions of the flaxseed and

oil market, to the end that the speculative hazards which formerly had worked injury to both seller and buyer would be minimized and eventually eliminated, and the economic law of supply and demand be more intelligently put into operation.

"ZONE SYSTEM" COMPLAINED AGAINST

Complaint is made against what is called the "zone system" and differentials applying thereto. It is true the prices quoted had reference to certain well defined territory, and the prices were accompanied by differentials to equalize the cost of railroad transportation. The record shows that these differentials were adopted after a thoro and intelligent investigation of freight rates from the base point to point of delivery, and the addition to the base price, in the different zones, was arrived at after a fair averaging of those freight rates into the designated territory.

Zoning for the purpose of fixing rates is not new. The Interstate Commerce Commission permits it in regulating the charges to be made by railroads. It is not a perfect system and there is always a certain amount of discrimination to those who live on or near the dividing line between zones, and I have no doubt a few buyers of oil may have been to some extent penalized, but every buyer had the option of purchasing f. o. b. point of manufacture, or f. o. b. point of delivery, and I must assume that the buyer would choose that f. o. b. point which seemed the most to his advantage.

CLAIM ZONE DIFFERENTIALS ENHANCE PRICES

The charge of the government that the zone differentials were adopted in order that the price charged for oil would be artificially enhanced and the defendant crushers consequently enriched, is not borne out by the evidence. There was no zone in which all the crushers did business, and the bulk of the finished product sold by the defendants was for delivery in zones carrying minimum freight differentials.

Counsel for the government seeks to draw an inference of guilt from the admission of defendants that the Bureau allowed them to sleep nights. The only restraint which the rules of the Bureau on their face impose is that the members agree not to deviate from their price lists without informing the other members at once by telegraph. At the close of each business day every member knew until the next day what the market was. It seems to me that the situation thus created is not dissimilar from that sustained by the United States Supreme Court in *Chicago Board of Trade vs. United States*, 246 U. S., 231. It is very evident that the Supreme Court does not believe that the Sherman Act should prevent men from sleeping nights.

BUREAU ORGANIZED TO FURNISH INFORMATION

The Armstrong Bureau was organized solely for the purpose of furnishing information not only to the linseed oil crushers, but to those interested in every other industry. It was a Bureau of intelligence, and one which makes for real rather than artificial competition in trade. There was no restriction placed upon any member. He was free to buy from and sell to whomever he chose. The Bureau operated solely as to past transactions, and wherever there is freedom of contract on the part of the constituent members there cannot be a violation of the Sherman Act.

The prosecution, down deep, evidently believes that an association of producers or merchants must necessarily be obnoxious to the Sherman Act because it affords an opportunity for the members to conspire to restrain trade.

DISMISSES BILL FOR WANT OF EQUITY

Where there is such an association it is perfectly natural for members to express themselves as to conditions and prices; in fact, that is what the association is formed for, and these

expressions have been seized upon by counsel as evidence to show that a corrupt agreement was actually made.

To my mind some of these expressions are evidence that no such agreement was in fact made, if they are evidence of anything. It would be perfectly natural, among a meeting of oil men, for some one to say that he thought prices ought to be higher. The meaning conveyed by such an expression would be that the man was at a loss to understand why prices were not higher, taking into consideration the demand and supply and conditions of the trade. I might well say today that the weather ought to be cooler without laying myself open to the imputation that the temperature had been fixed by agreement.

Logic which assumes that because there is an opportunity to fix prices, therefore prices are fixed, is contrary to the genius and theory of our law. Every man is presumed to be innocent until he is proved to be guilty. If the Armstrong Bureau is to be dissolved merely because it afforded an opportunity for the members to fix prices, then this court, with equal propriety, could be asked to dissolve any lunch club where business men met. This theory hardly warrants discussion, and I would not mention it had I not been gravely urged in this case, that such was the underlying thought of the prosecution. It is the ancient *fallax post hoc propter hoc*.

The bill will be dismissed for want of equity.



An EXCELLENT IDEA for ADVERTISING

Editor's Note—This story was written by O. C. Gould, of New Orleans, La., and it is printed because it contains valuable suggestions regarding advertising which the manufacturer of clay building materials might make use of. This is a case where a competitor has devised a new weapon which the brick or tile manufacturer can make use of to his own advantage.

A LEADING New Orleans architect and I were discussing the eminent suitability of hollow tile and brick construction for residences in a city so continuously warm and damp. We deplored the "packing box" tendency, even tho New Orleans is so close to the forests.

"A good many folks are using brick and quite a number

their names. I want to get some material from them, and I would like more names than I can use so that there will be room for choice."

CAN'T REMEMBER MANY BRICK OR TILE HOUSES

The architect thought. He looked up some of his records. He pulled out and glanced thru a number of magazines. He found a good many examples of business buildings, but we managed to list only about a dozen houses. That was the best this architect could do; name a dozen new homes built of substantial materials in a city of half a million people which formerly made much use of brick. You can imagine how many of such new homes the ordinary man on the street would be able to think of!

There have been a considerable number of such houses built, however, and they would furnish excellent advertising ammunition for dealers in brick and tile. It is this fact which makes the present campaign of the Delta Lumber Co., of New Orleans, suggestively valuable to such dealers. They could profitably follow a similar plan.

ADVERTISES CONTRACTOR'S NAME

Under the head of "Who's Who in the Building Line" the Delta company's newspaper advertisements, three columns in width and in all 28½ column inches, impress on the public in a three-fold way the recommendations of present public practice. Every advertisement pictures a structure now being built or rebuilt, or one very lately completed, with its lumber. The owner's name is prominently featured. There is similar emphasis on the name of the contractor, another profitable example of the wisdom of advertising the other fellow's business. The public is coming to know best the names of contractors working wholly with wood. Of course, it is expected to reflect that there must be some good reason for the use of this material by such particular or successful business men. To help it do so some of the advertisements have gone on to quote the owner or contractor as to why he used this material and what its use meant to him. There has been sufficient wood construction so that the Delta company will not soon run out of examples even tho the copy is changed with every new insertion.

If the brick and tile dealers of the city were thus reviewing, one by one, the residences which have been constructed of brick or tile, the public impression that brick and tile are too expensive to be practicable or are undesirable for other reasons would be effectively corrected. It seems to be a fact that the predominance of lumber is in large measure due to the emphasis placed on wood by advertising.

More Homes of Delta Lumber



Who's Who in the Building Line

The above is a photograph of a bungalow being erected in Murat street, near Banks, by

J. S. MITLESTEAT
Contractor and Builder

unanimous opinion of architect and real estate agent

But talk to them and let them tell you all about it



Delta Lumber Co.

3536 Carrollton Ave.
Walnut 88-89-1405

A Sample of the Delta Lumber Co.'s Advertising Showing How the Contractor's Name is Prominently Put Forth.

tile nowadays," maintained the architect in reply to an assertion of mine.

"I'm glad to hear it," was my reply. "Now, you give me

INDIANA REALTORS ASKED to ENDORSE 8 INCH WALL

Indiana Real Estate Association Told of Advantages in Brick Construction—48 Cities Now Permitting Ideal Wall in Small House Building

By William Carver

Architect, Common Brick Manufacturers Association

I AM HERE TO TALK frankly about the use of brick in residence construction. In drawing comparisons between a brick house and a house of the prevailing type of construction, which you know is frame, I would not wish my remarks to be interpreted as being derogatory to the wooden house. I am by profession an architect and am supposed to have a fair knowledge of all types of construction. In making comparisons, however, it is only natural to refer to something with which all are most familiar. A certain proportion of houses will always be built of wood, for some people will always prefer them.

Brick, as you know, is one of the most ancient of all the building materials and one of the most enduring. "Marble crumbles into dust of carbonate of lime; granite disintegrates into mica, quartz and feldspar; but well-burned brick endures forever in the ancient landmarks of mankind," says Sir Charles Lyell in his book, "The Antiquities of Man." Many modern towns in Asia Minor are built with the brick taken from the ruins of buildings dating from almost prehistoric times; and the brick made here today are made from the same material—clay—burned in the same way. The details of handling the material have, of course, been improved but the basic principle of manufacture has always been the same. Brick is the product of the experience of centuries. There is nothing experimental about it.

OTHER COUNTRIES AHEAD OF US

In every civilized country on the globe, with the exception of this continent, brick is the prevailing material for all classes of buildings, including residences. Those of us who are familiar with European countries are glad that this is so, for in those buildings are written the traditions of our forefathers for their architecture still endures, the texture of their beautiful old brick masonry being only softened and enriched by the hand of time.

It is a matter of speculation, however, as to how long America can indulge its habit of building with frame. The Secretary of Agriculture said recently, "Three-fifths of the original timber of the United States is gone, and we are using timber four times as fast as we are growing it. The United States is not only cutting heavily into its remaining virgin forests every year, but is also using up the smaller material upon which our future supply of saw timber depends much more rapidly than it is being replaced." Every citizen

has a vital interest in the question of how the timber can best be conserved.

LUMBER ALWAYS NECESSARY

A large quantity of wood always must be used in the construction of a brick house—for joists, floors and trim. Nothing is so suitable and probably nothing will soon take the place of wood for these purposes. But protect all this woodwork with enduring walls of masonry and it will have its period of usefulness multiplied four times or more as a general average. By building more brick homes we will be on the road to lumber conservation in its truest sense.

The first thing a man, however, says is, "A brick house



WILLIAM CARVER.

will cost me more and I can't afford it." The association with which I am connected has recently developed an entirely new type of brick construction actually costing no more than ordinary construction which I will explain fully later. For the present we will deal with brick houses built the traditional way, with solid walls.

An average six room house of brick in most localities

Editor's Note—Excerpts from paper read before the eighth annual convention of the Indiana Real Estate Association at Indianapolis by William Carver, architect of the Common Brick Manufacturers' Association.

costs not more than \$400 or \$500 added to the cost of similar house of frame. Some contractors, unfamiliar with brick construction and possibly afraid of starting something new, have a habit of stating off-hand that a brick house will cost a large percentage more than frame. But an itemized estimate will show that the difference cannot be so great. The foundation, chimneys and the whole inside construction of the house is exactly the same whatever construction is used, only the outside walls being of a different construction. In any case, the brick house apparently costs more, but the home owner never pays the increased cost. Even with this apparent difference the brick house actually costs the home buyer less, and for this reason:

UPKEEP PART OF ORIGINAL COST

The average man, when acquiring a house, does not come to you with the entire purchase price in his hand. He is generally prepared to pay down a certain amount, the balance being forthcoming by installments. Now it is eminently fair to include in the purchase price of a house the upkeep costs until such time as the title is clear and supposing that his payments extend over ten years (the average period), his house in brick will cost him actually less money than if he had built it in frame. According to figures issued by the Boston Chamber of Commerce, the upkeep cost on a frame house averages $2\frac{1}{2}$ per cent. per year. On the brick house, it is negligible.

Let us put it another way—supposing a certain house cost, exclusive of lot, \$7,000 in frame and \$7,500 in brick, the lot being worth \$1,500. The buyer makes a first payment of \$1,000. Supposing the buyer were able to pay only \$85 per month; that this included interest at six per cent. per year and that he retained from his \$85 per month, an amount necessary to paint and insure the structure.

COMPARATIVE AMOUNTS TO BE RETAINED

For the frame house the following amounts would have to be retained yearly from his \$85 per month: Interest \$225, painting \$100, insurance \$24.08; total \$349.08.

For the brick house the following amounts would have to be retained yearly from his \$85 monthly payment: Interest \$240, painting \$8.50, insurance \$12; total \$260.50.

These yearly overhead charges would be, therefore, \$349.08 for the frame house and \$260.50 for the brick house.

Still figuring that these amounts are retained from payments of \$85 per month, the owner of the frame house would still have a debt of \$651.96 on his house at the time that the owner of the brick house received a clear title to his home.

The brick house, therefore, costs less, even tho its apparent cost is \$500 more.

After he has paid for his house, what is the value of his property?

Experts tell us that the frame house begins to depreciate as soon as it is built and depreciates at the rate of three per cent. per year. They tell us, moreover, that inasmuch as the life of an ordinary brick house is somewhere about the century mark, no depreciation is figured for a brick house for the first five years after it is built and only at the rate of one per cent. per year after that.

DEPRECIATION IN TEN YEARS COMPARED

Leaving out of consideration the neighborhood influences which would affect the value of the property and considering the house by itself, it is evident that if the title is clear in ten years the frame house owner has lost 30 per cent. of his investment in depreciation, the brick house owner having lost only five per cent.

Considering the house as an investment, which is the

better proposition, the house which actually costs more and declines 30 per cent. in value while being paid for, or the house which costs less and declines only five per cent in the same period of time?

No wonder that the brick house is worth increasingly more on the market than is a frame house. The brick house is beautiful when first built and its charm increases as the years go by. It saves money on coal, insurance, painting and general upkeep and it is fire-resistive.

ONE HOUSE CAN DEPRECIATE A NEIGHBORHOOD

It is hard to tell the age of a brick home, or a group of brick homes, for the wall surfaces are even more attractive after half a century than when first built. Frame, on the other hand, always shows its age and run-down houses mean a run-down neighborhood. Moreover, even in a neighborhood of new frame houses, here and there will be found a man who may not be able financially or who perhaps has not the proper interest to spend \$200 every other year in a lump sum to keep his house freshly painted, and this always tends to depreciate surrounding property. This danger does not exist with brick, of which the appearance is as indestructible as the material itself. Only frames and trim have to be painted on a brick house and these only once every five years or so, because, being set back from the face of the wall, they are protected from the weather.

OFFICIAL DISAPPROVES OF LARGE FIRE LOSS

Dr. S. W. Stratton, the director of the U. S. Bureau of Standards, said recently:

"I am inclined to think that the greatest waste going on in this country today is the destruction of houses by fire. Last year it was my duty to go abroad and in passing thru those countries, I noticed, as never before, that the cottages of the workman, the simplest structures, were always fireproof. They would last for one hundred years. Less than three months later, I had occasion to take a trip thru our southern states and I noticed the construction which has been going on there during the last few years. To be sure this construction was needed to quickly enlarge the housing facilities but these houses have been built entirely of wood. In some cases they are very neat and attractive, designed according to plans and well laid out, but in a few years they will all disappear. Why shouldn't the small house be made durable? Why shouldn't it be made sanitary and comfortable? That is the great problem before us in this housing situation today."

Mr. Robert D. Kohn, the noted architect who was Chief of Production of the Housing Division of the Emergency Fleet Corporation during the war, recently stated when speaking of the selection of building material for the Government war housing operations:

FRAME PREVAILS IN SOUTH, BRICK IN NORTH

"As I remember the matter, the Housing Division of the Emergency Fleet Corporation had a number of calculations made as to the relative cost of brick walls vs. frame walls, basing the calculations on the price of brick in various communities. In Florida, Savannah and at other points where lumber was very cheap it seemed only natural to mainly depend on frame buildings, but in a district like the Philadelphia district, or up in New England at certain points where brick was fairly reasonable we found that the cost of eight inch brick walls was only a very little more than the cost of frame walls and the maintenance cost was so much less that there was very little hesitation in deciding in favor of the brick.

"At places like Bath, Me., for instance, practically every house was built of brick. The majority of the houses in

Portsmouth were also built of brick. As I remember it, in these two places the very cold weather was an element to be considered, and the local sentiment was entirely in favor of brick. Some of us thought an eight inch brick wall furred on the inside was altogether a better proposition both for the cold in winter and the heat in summer than a frame house no matter how insulated, unless great expense was incurred. This point of insulation, by the way, is frequently neglected in the discussion of this subject."

NEW TYPE REDUCES FIRST COST

I would like to impress upon you that the foregoing facts and figures are based on ordinary brick construction.

An entirely new type of brickwork has been developed within recent months by the Common Brick Manufacturers Association, by which the first or contract price of a brick house is brought down to that of a frame house, and which possesses other advantages. I refer to the Ideal wall, of which most people have heard something in recent months.

The great saving in a wall of this type is due to the fundamental principle of laying all or part of the brick on edge, which throws it also into the class of hollow walls. This apparently simple change in the manner of laying the brick is productive of very surprising results.

It saves 25 per cent. of the brick, 50 per cent. of the mortar and eliminates the necessity and expense of furring the inside of the wall.

SAME BENEFITS AS SPECIAL SHAPES

This construction really accomplished something that has been striven for by the use of all kinds of special and rather awkward masonry shapes. With the Ideal wall only standard, ordinary brick are used—no special shapes being necessary, and this saves labor cost of sorting and mason's time. You will note that this method of laying the brick eliminates the thru mortar joint altogether. Now the only way by which any moisture can penetrate a wall of hard burned brick is thru the mortar joint. That only can happen under very severe conditions and is the basis of the recommendation that all masonry walls be furred. With the Ideal wall the mortar joint does not extend thru the wall. The only material which runs clear thru an eight inch Ideal wall is the header brick and in a 12 inch wall even the headers do not run thru.

In practice it has been found that the header, of which only a small area is exposed to the weather, will not carry moisture its full length by capillary attraction. In this it is aided also by the slight but continuous circulation of air within the hollow space. This also tends to dry out any slight suspicion of moisture which might be present in the portion of the header within the hollow space.

NEW TYPE HAS SPLENDID HISTORY

The Ideal wall is not an experiment, altho it was developed independently by the Association with which I am connected. As might be almost expected of such a simple idea, it has been used here and there in many places.

From the province of Fukien, South China, comes word that it has been used in that semi-tropical climate for hundreds of years; from the cold climate of Sweden comes a photograph and description of an Ideal wall cottage, plastered directly on the brick, occupied since 1880 and always found comfortable, and in many places in the United States the wall has been used with great success.

In Phillipsburg, N. J., it has been used for an entire group of houses. These have been occupied almost 18 months and all are thoroly comfortable. It is rapidly coming into use in all parts of the United States. The following is a list of cities where the wall is now allowed: Washington, D. C., Cleveland, Toledo, Cincinnati, Erie, Newark, Fort

Worth, Gary, Seattle, San Antonio, Los Angeles, Minneapolis, Portland, San Diego, Atlantic City, Terre Haute, El Paso, Wheeling, Kansas City, South Omaha, Newton, Chicago suburbs, St. Louis suburbs, Salt Lake City, Anacostia, Belmont, Decatur, Alton, Edwardsville, Rosedale, Lake Charles, Shreveport, Cambridge, North Adams, Brookhaven, Hattiesburg, Dunkirk; Homestead, Reading, Chattanooga, D'Hanis, Gonzales, Morgan, Vancouver, Hampton, Huntington and Represa. The Ideal wall is no experiment but is a standard form of construction.

IDEAL WALL HOUSES SELL BEFORE FRAME

We have a mass of evidence to substantiate the claim that the Ideal wall is the lowest cost of construction. For instance, Mr. Oehler, of the Continental Brick Co., of St. Louis, tells us of a contractor at Alton (just across the river from St. Louis), who put up four houses, identical in plan. Two of these houses were of frame construction and two of



A Home Built with Ideal Walls, Showing That This Method Is Also Practicable for Good-Sized Two Story Houses.

brick Ideal wall construction. He found that the two types of houses cost him about the same to build, but the brick homes looked and were so much more substantial that he put the price \$300 above the frame houses. He sold both the brick houses and still had the frame houses on his hands the last we heard.

The Representative Realty Co. of Cleveland, who are big operators, inquired of us the relative cost of a frame house and Ideal wall house in Cleveland. This company keeps accurate cost records of every part of their work, so all we had to do was to figure the difference in the cost of the outside walls above the first floor line. For one of their typical houses, about 24 feet square, the costs ran as follows: Frame walls \$517.33, Ideal walls \$468.31. This shows a saving of \$50 in favor of the brick walls. They checked these figures very carefully and told me afterwards that on account of the discounts on lumber which they could get in view of buying a large quantity the cost would run just about the same.

NO MONOPOLY OF NEW TYPE

Might I suggest to you who are building operators to try out at least one house with Ideal brick walls? There's no royalty on it and no patent. You can offer your customers a superior house at no greater cost to you than any other form of construction. You will benefit yourselves not only directly but in the greater satisfaction that your customers will have in their homes. You will safeguard the appearance of your allotment from getting shabby and you will help to solve the question of the waning timber supply.

Might I also draw your attention to another matter in which,

as realtors, you will have great influence? The brick manufacturers are making a concerted effort to have the building codes made uniform to allow an eight inch brick wall for both stories of a two story residence. It is an economic waste to insist on thicker construction, for the eight inch wall is proving satisfactory and comfortable in thousands of homes in a great number of cities. By requiring a greater thickness, a man's preference for permanent construction is severely taxed. To insist on a greater thickness than eight inches reduces the area of the rooms in the house, a serious consideration in the small residence. But most important of all, it places an unjust burden on the man who can least afford to bear it, the small home owner.

EVIDENCE GATHERED BY GOVERNMENT

This matter is now before Mr. Hoover's Building Code Committee. The following are extracts from some of the evidence submitted to that committee:

Burt L. Fenner, architect, of McKim, Mead & White, formerly general manager of U. S. Housing Corporation said,

"I know that thousands of two story brick houses in this country have been built with eight inch walls with satisfactory results. That being the case, what possible reason can there be for requirements in building codes that walls should be 13 inches thick. As you know the U. S. Housing Corporation, in its work during the war, adopted eight inch walls as standard."

R. Clipston Sturgis, architect, Boston, who directed extensive housing developments for the Government testified that,

"An eight inch wall well laid, with joints thoroly filled, furred off for plastering, is a sound, safe and permanent wall. It should replace wood in all closely built districts, and it is, in my judgment, better than terra cotta, either with or without plaster, better than a wood frame plastered outside, and better than a wood frame with brick veneer."

EIGHT INCH WALLS FOR SECOND STORY

Frank L. Packard, architect, Columbus, Ohio, stated,

"In regard to the use of eight inch brick walls in small houses in this city, I wish to say we are of the opinion that the use of eight inch walls for both stories of small two-story houses has proven structurally sound.

"We cannot say just what effect the enforcement of a law compelling the use of 13 inch walls would have on the number of houses constructed but we are of the opinion that it would probably increase the number of frame houses."

Arthur L. Loveless, architect, Seattle, Wash., said,

"Certainly an eight inch wall is amply strong for the exterior walls of small houses, and I am sure that if a 12 inch wall was required where an eight inch wall is not allowed, it would materially restrict the number of such houses constructed."

The following is a partial list of the cities now allowing the eight inch wall for both stories of a residence:

Baltimore, Birmingham, Boston, Cambridge, Columbus, Cleveland, Detroit, Minneapolis, New York City, Philadelphia, Seattle, Spokane, Pittsburgh, Tacoma, Washington, D. C., Wilmington, Richmond, Syracuse, Tampa, Worcester, New Haven, Manchester, Rochester, Toledo, Duluth, Hartford, Rock Island, Lynn, Cincinnati, Trenton, Portland, Buffalo, Dayton, Camden, New Bedford and New Orleans.

If in any city represented here the code now calls for a brick wall thicker than eight inches, might I suggest that you use your best efforts to have it amended? By doing so you will make it possible for the man of limited means to have a better home and you will aid in having a better city.

✂ ✂ ✂

Without enthusiasm it is hard to make a success of anything. You can get your supply of "pep" at the conventions this winter.

J. D. Ramsay Deplores Lack of Cost System

The address of John D. Ramsay of the Elk Fire Brick Co. of St. Marys, Pa., president of the Refractories Manufacturers' Association, at the meeting held in Cleveland, Ohio, September 15 and 16, showed that the membership in that Association has increased within the past year despite the existing adverse business conditions, and that the research work at the Mellon Institute has become almost self-supporting.

Mr. Ramsay also explained the benefits accomplished by the Refractories Accountants' Institute, altho it was formed less than a year ago. In this connection Mr. Ramsay stated, "I am firmly convinced that the lack of good cost systems and good accounting methods is the greatest obstacle in our road to success. It is most depressing to read that, according to Government statistics, less than ten per cent. of the manufacturing corporations of the country have installed and used up-to-date cost accounting systems."

Attention was also called to the splendid work of J. M. McKinley, classification engineer, in the difficult work of classifying thousands and thousands of different shapes and allocating them properly with relation to cost of production. Mr. Ramsay also spoke of the expected decision in the freight rate case known as I. C. C. Docket 10733, and of the final adoption by the American Society of Testing Materials and by the Refractories Manufacturers' Association of the terms "high heat duty brick," "intermediate heat duty brick," "moderate heat duty brick" and "low heat duty brick," instead of the old terms, number one, number two, and so forth, which were misleading.

In concluding the address Mr. Ramsay said in part:

"These are very trying times and yet they offer wonderful opportunities for assisting our fellowmen, our creditors, our competitors, our nation and last, but not least, the laboring man. We should sympathize with him and remember that his wife and children love food, shelter and clothing just as well as do our own families and dependents. We are the guardians of the men who work for us and equally so of their dependents. We should strive with all our energy to provide in some way, sufficient work to prevent 'soup houses' and 'bread lines' in the vicinities in which we operate and we should remember, when we seek business, that the employes of our competitors need a fair share of the distribution. We should not reduce the wages of employes just because the supply of labor is greater than the demand, but we should set our wage scale so that it will be in line with the cost of living and no lower.

"We should not, as individual manufacturers, cut our selling prices to a point where we will be compelled to reduce wages out of proportion to wages paid in other industries, nor should we be guilty of cutting prices to a point where we cannot pay a fair living wage to our employes. As I said before, this period offers marvelous opportunities to 'do unto others as you would have them do unto you.'"

✂ ✂ ✂

Experimenting to Make Super-Refractories

At the Northwest Experiment Station of the United States Bureau of Mines, Seattle, Wash., an investigation is to be undertaken regarding the preparation of super-refractories by melting and treating clays in the electric furnace and preparing from these products refractory materials, chiefly brick. It is expected that simple fusion of the clay will improve its refractoriness. It is also expected that some iron and silica can be removed with a subsequent improvement in the refractoriness. This investigation, which is in cooperation with the University of Washington, will be conducted by C. E. Williams, superintendent of the Northwest Experiment Station, C. E. Sims, electrometallurgist, and Hewitt Wilson, ceramist, of the Bureau of Mines staff, and A. Lee Bennett, fellow of the University of Washington.

REFRACTORIES ACCOUNTANTS WORK *on* COST PROBLEMS

Many Interesting Papers Read at Meeting of Refractories Accountants Institute—Solves Problem in Burning

By G. W. Greenwood

Treasurer, United Refractories Co, Uniontown, Pa.

THE REFRACTORIES ACCOUNTANTS INSTITUTE held a decidedly important and interesting meeting at the Hotel Pennsylvania in New York City, October 24 and 25. This organization is composed of accountants and those directly interested in the subject, whose companies are members of the parent Refractories Manufacturers' Association.

In addition to the part taken by the members, there were two papers presented: One by L. P. Alford, editor of "Management Engineering," and a member of the Committee for the Elimination of Waste in Industry, appointed by Herbert Hoover, whose findings have aroused such wide-spread comment; the other by G. Charter Harrison, a chartered public accountant and author of "Cost Accounting to Aid Production."

CANNOT GUESS AT COSTS

The morning session of the first day was taken up with Mr. Alford's paper and its discussion. The report in the metal trades places upon management responsibility for over 80 per cent. of the unnecessary waste, and a prominent factor is the ineffective accounting which permits this waste to go undiscovered by the management and unchallenged. In another industry it was found that only a small number kept proper cost records, and also that these were the only firms which were making a profit. All those who guessed at their costs appeared to be poor guessers. Either they guessed too high and lost the business, or guessed too low and lost in this manner.

The afternoon was entirely taken up with Mr. Harrison's paper and an animated discussion concerning it. Mr. Harrison's method consists of setting up standards along lines held down by Emerson, Gantt and other pioneers, together with a system of measuring by these standards the actual charges incurred. By this means each element of the cost is investigated separately, so that an avoidable waste cannot be obscured by a saving in another direction.

MANY INTERESTING PAPERS READ

Papers and reports by members were as follows:

"The Future of the Institute," by W. J. Westphalen, St. Louis.

"Cooperating with the Sales Department," by H. L. Grohne, Pittsburgh, Pa.

"Distribution of Overhead," by J. G. Power, St. Marys, Pa.

"Uniform Cost Accounting," by R. E. Byrne, Ashland, Ky.

"Is Interest an Element of Cost?" by R. P. Rickard, Johnstown, Pa.

"Obsolescence," by M. D. Worthington, Curwensville, Pa.

On account of the scope of these papers, it was decided to take them up section by section at later meetings of the

Institute, the sections for discussion being bulletined in advance to the members to enable them to come well prepared.

The next meeting will be in Columbus, Ohio, December 19 and 20, Hotel Deshler, at ten o'clock.

The following is a discussion by the author of a problem similar to one presented at the meeting of the Refractories Accountants' Institute:

A BURNING PROBLEM

A kiln is supposed to contain 50,000 brick, to be burned in ten days at a labor cost of \$10 per day, using 50 tons of coal at a standard cost of \$2 per ton. It was found that the kiln was set with 51,000 brick, required 11 days to burn at a labor cost of \$9 per day, consumed 45 tons of coal which cost \$2.50 per ton. Was there a gain or a loss as compared with the standards, and where did the difference occur?

In the standard case, we have a labor cost of \$100 and a coal cost of \$100, which gives on the basis of 50,000 kiln contents a standard cost of \$4 per thousand for these two items.

The actual cost in this case was \$99 for labor and \$112.50 for coal, which divided by the actual contents gives a cost of \$4.15 per thousand.

REASONS FOR HIGHER COST

In passing, it should be remarked that when we divide by the contents and secure this quotient, we are on the wrong track. Except for the setting of standards, there is probably little use for division in cost accounting.

The manager now starts looking for the reason for the increase of 15 cents per thousand in the cost of these two items. The setter points out that he has set the kiln a little better than the standard, so that it is not up to him. The foreman in charge of the burning points to a reduction in the labor rate of \$1 per day, and states that there was an increase of 25 per cent. in the price of coal for which he is not responsible. How the use of percentages does muddy up the water and obscure results! The purchasing agent states that the coal was worth the difference in price, that it required ten per cent. less even with an extra day's burning, and that if the kiln foreman had been properly looked after, the kiln might have been burned in nine days with a considerably greater saving in coal cost. By this time the manager decides that he is riding in a merry-go-round.

SOLVING THE PROBLEM

Let us look at it this way:

Standard labor and coal cost, per M.....	\$4.00
Quantity of brick burned.....	51,000
Cost at standard rate of \$4.....	\$204.00
Actual cost	211.50
Net loss	7.50



Members of the Refractories Accountants Institute. Reading from Left to Right They Are as Follows: Back Row, F. W. Neuroth, Connellsville, Pa.; D. P. Wall, Curwensville, Pa.; M. D. Worthington, Curwensville, Pa.; R. E. Byrne, Ashland, Ky.; J. M. Dilworth, Connellsville, Pa. Middle Row, H. L. Grohne, Pittsburgh, Pa.; G. W. Greenwood, Dunbar, Pa.; C. J. Steitz, Cleveland, Ohio; F. S. Dunlap, Claysburg, Pa.; E. F. Henry, Lock Haven, Pa. Front Row, R. P. Rickard, Johnstown, Pa.; J. G. Power, St. Marys, Pa.; W. J. Westphalen, St. Louis, Mo.; C. W. Jordan, Pittsburgh, Pa.; G. Charter Harrison, Author of "Cost Accounting to Aid Production," New York City; L. P. Alford, Editor of "Management Engineering," New York.

Now what the manager is really looking for is \$7.50. According to the writer's method of handling this problem, the solution would be as follows:

Setting the additional 1,000 brick resulted in their being burned at no cost, making a gain of.....	\$ 4.00	
Requiring an additional day of burn in itself involves a loss of.....	\$10.00	
The reduction in the labor rate of \$1 per day resulted in a gain of.....	11.00	
Using five tons less coal gives a gain of.....	10.00	
The additional cost of 50 cents per ton on the coal used gives a loss of.....	22.50	
Totals	\$32.50	\$25.00
Net loss	\$ 7.50	

USE OF STANDARDS SHOULD BE GENERALLY APPLIED

This, as the writer understands it, is the plan of analyzing costs recommended to the Refractories Accountants' Institute by Mr. Harrison. Is there any other method by which the manager could obtain detailed information of this character, to guide him in the more efficient management of the plant?

Ultimately, this use of standards should be applied to the entire factory, comparisons being made between such standards and the actual results, so as to differentiate between necessary elements of cost and needless waste. In his paper before the same meeting, Mr. Alford in telling of the results of the investigation of the committee to eliminate waste, stated that, in his early experience as an engineer, he found it difficult at best to obtain from the accounting department information of any use to him in introducing efficiencies or in measuring the results.

TREAT DIFFERENT PROBLEMS SEPARATELY

But whatever system of accounting one may have, or even if he has none at all (in which case he is in some respects better off than some of the rest of us) it is possible to apply such an analysis to different departments until he is able to form some estimate as to their possible value in a cost

system entirely built up on such a basis of standards. In the meantime he does not change his present methods.

One thing should never be overlooked (but it generally is) is this: Costs, bookkeeping, internal revenue reports—all are entirely separate accounting problems. They should in all cases be reconciled, showing what has been included in the one but not in another, but they need not, in practically all cases they should not, be identical.



Kansas City Planning Building Exhibit

The Kansas City Real Estate Board has announced that the "Better Homes and Building Exhibit," that it has had in mind to hold for several years, will be staged February 6 to 11. The exhibit has been held up by the war and conditions following the war, but the insistent demand for all kinds of buildings, and especially for homes, together with the large increase in the number of building permits granted in Kansas City and surrounding territory, convinces the board that the time is now ripe for holding the exhibit.

The local chapter of the American Institute of Architects is joining with the Real Estate Board in arranging for the exhibit. Material men of all kinds are especially interested in the exhibit, as it offers an opportunity to show to the prospective builders the newer things that have been developed during the past few years. Brick men have an added interest in the matter, since it is the announced intention of the members of the commission appointed by the city Chamber of Commerce to draft a new building code, to recommend that the new code shall provide for the use of an eight-inch wall within the restricted district for dwellings and smaller buildings. It is expected that this arrangement will largely increase the number of brick buildings that will be built.

It is the purpose of the board to have the exhibit cover everything that goes into the construction of buildings, and also their equipment and decoration. Economy and efficiency will be stressed, and beauty will be fully recognized. Sanitation will be given a prominent place, also. It is a primary purpose to show the prospective builder what is offered by the manufacturers, the manufacturers' agents, and the merchants of Kansas City, and to create demand for the best that the market affords.

The BUILDING SITUATION

THE MONTH of September in New England rounded out with building contracts totaling \$16,026,000 for that territory; of this amount, residential construction represents 43 per cent., or \$6,984,000; business buildings, 17 per cent., or \$2,840,000; industrial structures, nine per cent., or \$1,394,000; and educational buildings, eight per cent., or \$1,240,000. Miscellaneous structures represent the balance of 23 per cent., with an amount of \$3,568,000.

Burned clay products in the Boston market hold firm at existing price levels, and no immediate decline in basic commodities seems likely. Common sand-struck brick, delivered, is quoted at \$17 a thousand; regular New York production is priced at \$18, while New England material is selling at \$21, on the job. Kiln run, water-struck brick remains at \$30.

NEW ENGLAND FIRE BRICK PRICES

Fire brick, boiler No. 1, is selling for \$60 a thousand at the leading dealers, with higher grade material quoted at \$70. Selections range as high as \$80 for the best refractory material. Face brick shows no change from \$40 to \$50 levels, grays and buffs being available at the latter figure.

Standard sewer pipe is quoted at 50 per cent. off list, with double strength material selling at 35 per cent. off. Flue lining is 50 per cent. off, and wall coping, 45 per cent. Fire clay shows no variation in a figure of \$25 a ton.

The seasonal brick yards in this section are ending their season with a fair amount of reserves on hand; the fairly heavy distribution in recent weeks has gone to reduce stocks at a number of plants.

PROVIDENCE CONSTRUCTION PROGRESSES

Building operations in the Providence, R. I., district are increasing, with industrial work taking a more pronounced part in the movement. The building material market at Providence is rather featureless. Common brick prevails at \$27 to \$30 a thousand, delivered. Fire brick, \$80 to \$100; and face brick, \$45 to \$60, according to selection. Fire clay is being retailed at \$1.50 a bag.

The supply dealers are pricing four inch drain tile at 16 cents a foot, and three inch material at 12 cents. Flue lining, 8½x13 inches is selling for 67½ cents a foot, and 8½x8½ inches at 45 cents. Partition tile holds at \$220 a thousand for 4x12x12 inches, and at \$380 for 8x12x12 inches.

BUILDING OPERATIONS GROW AT NEW YORK

Residential structures at New York continue at high peak, and new totals are being recorded. In the Queens district, homes for more than 30,000 persons have been erected during the first nine months of the year. In this time, about 10,000 building permits have been issued, and of this number approximately 6,000 permits were for dwellings. The valuation of the work is placed at \$55,715,611. Mortgage loans are growing in volume, and early in November the Metropolitan Life Insurance Co., alone, authorized a distribution of \$8,394,350 for this purpose.

Improved business prevails in the common brick market at New York; both arrivals and sales are heavy, and the end of the first week in November shows but four barge loads of materials unsold in the market. The cargoes now being sent down from the Hudson River points are running from 42 to 49 per week, and in the past fortnight, no less than 37 barge loads have been sent to Brooklyn, where brick house construction is reaching remarkable proportions.

The price of brick in the wholesale market is well established at \$15, and a number of sales of off-grade material re-

cently have been made at prices from \$13 to \$14. Material dealers are asking \$17.50 for new stock, delivered.

HUDSON RIVER PLANTS CLOSING DOWN

The brick plants in the Hudson River district are now closing down rapidly, and each week shows a number of plants off the producing list. There is considerable activity in stacking up and loading, and many barges are being made ready for New York shipment before cold weather sets in. The steam-dryer plants are continuing production and likely will continue thruout the winter.

According to the manufacturers of terra cotta tile, prices are now at their lowest point, and some sizes of material are being sold, it is said, below cost. There is a stiffening in price levels and the time when the buyer could almost name his own figure, as evidenced in recent months, is rapidly passing. Exterior tile is not used in New York. Interior partition blocks hold at recently established figures, 2x12x12 inch and 3x12x12 inch selling at \$120 a thousand; four inch material is at \$170, and 6x12x12 inch stock, \$190.

NEW JERSEY BUILDING GAINS

Gains of worthwhile volume are being recorded in construction circles in New Jersey. From official figures of the different important cities for September, recently compiled, practically every community shows advancement as compared with the corresponding month for last year. Newark takes the lead with a gain of 386 per cent., the total for the month standing at \$3,360,392, as compared with \$691,305 in September, 1920; next follows West Hoboken, with 374 per cent. increase; Hoboken, 347 per cent.; Atlantic City, 194 per cent.; East Orange, 170 per cent.; Trenton, 116 per cent.; Elizabeth, 115 per cent.; Paterson, 106 per cent.; and Plainfield, 30 per cent.

With the close of October, the ten months' building for the year at Newark shows a decline of \$2,000,000, as compared with the same period of 1920. Allowance, however, must be made for the reduced cost of building supplies and consequent lower cost of construction. The figures for 1921 stand at \$17,287,606, as against \$19,523,526 for the preceding year, indicating that the full yearly period will hold favorably with former twelvemonths.

NEW JERSEY PRICES

The New Jersey building material markets hold uniform and there is little if any change in the situation. At Newark, wholesale brick is around \$17 and \$18 a thousand, with dealers asking from \$20 to \$21 on the job. The Paterson district, drawing heavily on the Hackensack yards, shows a slight decline in retail figures to the point of about \$19 delivered. Good hard common brick at Trenton is selling for \$18 and \$19 a thousand retail, while prices at the kiln are at \$16 and \$17.

The Hackensack seasonal yards are closing their 1921 runs, and cleaning and stacking up is the order of the day at the present time. Material is bringing from \$16 to \$17 at the kiln in this district, with a tendency for prices to stiffen as production ends. The yards at Trenton show a corresponding movement, while the steam-drying plants are running at fair capacity. Indications are that these latter plants will maintain manufacture thruout the winter period.

RECORD CONSTRUCTION AT PHILADELPHIA

There is growing strength in the construction movement at Philadelphia. Figures for the month of October just closed were the highest for any corresponding period in the last decade. A total of 1,285 building permits were issued during

this time with valuation of \$5,553,225. The previous highest October record was in 1919, with \$4,840,005, or approximately \$700,000 less. Two-story brick dwellings, commonly known as "Philadelphia houses," are exceedingly popular and building permits for this character of structure alone in October reached a total of \$1,212,145 in estimated cost. The aggregate dwelling work in this month in Philadelphia totaled 308 dwellings, valued at \$1,761,295.

Common brick in the Quacker City holds at \$20 per thousand at the different yards, delivered. Second-hand material is quite plentiful, and a number of dealers are delivering at \$10 a thousand within certain zones; a slight advance is made for truck hauls to distant points.

The price range is from \$42 to \$55 a thousand, with grays and buffs easily the favorites, and rough texture material leading.

INCREASES AT WILMINGTON

The building situation at Wilmington, Del., continues to show encouraging growth. Noticeably increased calls are being made for brick and other burned clay products, and with the turn of the fall building season there has been an influx of almost countless repair jobs to absorb sizeable quantities of materials. Neighboring sections, such as Seaford, are enjoying small-sized building booms, with house construction the big feature of attainment.

Common brick in this district holds firm at a \$22 level. Fire brick is priced at \$70 and \$75, while face brick is quoted at from \$43 to \$54, according to selection. Hollow building tile is around the \$150 mark, for eight inch stock, and partition block at \$125 upwards, depending on size.

ADVANCEMENT AT BALTIMORE

October building records at Baltimore show a total of \$1,269,000 for projected work during the month. This is a slight decrease as compared with the September totals, but with necessary allowance to be made for reduced costs of construction. Residential work is the big feature of operation, and brick housing developments are now to be noticed in numerous sections of the city. During October, two-story brick dwellings in Baltimore proper aggregated \$254,000 in valuation.

Sales of common brick are attaining sizeable proportions, with figures of \$20 and \$21, on the job, prevailing. Face brick is averaging around \$48 for prime selections, while fire brick No. 1 standard is selling at \$70 and \$75. Particularly high-grade refractory material is \$80.

PITTSBURGH DISPLAYS NEW BUILDING ACTIVITY

Permits were issued by the Pittsburgh bureau of building inspection for 524 projects during October, representing an investment of \$4,134,978, an increase of more than \$2,000,000 over the building permits issued during September. The total was swelled by permits issued for several important commercial projects, construction work on all but one of which is now under way. Of the permits issued, 132 were for new buildings classified as housing, a gain of 29 over the September list.

A marked decline is shown by last week's list, during which time only 89 applications for permits to build were filed with the city bureau, for projects to cost \$254,676, a decided slump when compared with any week of October.

To the fact that money can be secured with increasing ease is attributed the recent entry of commercial builders into the construction field on a larger scale than has been noted for several years. Ground has been broken, it is reported, in the East Liberty residential section of the city where one of the most prominent builders of the district is planning a community project which will consist of houses, stores and other buildings to the number of almost 100.

CLEVELAND

For the month of October the construction work in Cleveland, Ohio, looms up to practically double that of the same month a year ago. Practically the same number of projects were under way during each of these periods, but the amount involved last month was better than \$5,000,000, against a little more than \$2,000,000 for October, 1920. This shows significant gain, inasmuch as the total volume for the first ten months of 1921 is approximately \$41,000,000, against \$57,000,000 for the first ten months of 1920. It is this gain that inspires confidence in the brick and allied branches of the material end of the industry, since, for example, seven brick apartment houses are provided for during October of this year, against only two similar structures for the same month a year ago.

MANY FACE BRICK SOLD IN CHICAGO

Important developments in the Chicago labor situation have taken place and a citizens' committee has undertaken the job of cleaning up the building industry in Chicago. The committee has adopted the following five points which will govern its policy:

1. Those employers who continue their operations under the terms and conditions of the Landis award will be encouraged and, when necessary, protected in their operations.
2. Those unions which accept the terms and conditions of the Landis award, both in spirit and in fact, will be supported.
3. The sale and use of material going into building operations shall be free from arbitrary restrictions.
4. Contractors who refuse to operate under the Landis award deserve neither the encouragement nor the support of the public.
5. In those trades where the unions do not accept the terms and conditions of the Landis award, work shall continue by workmen who are willing to work, regardless of their union affiliations. These men will be protected and these trades will be permanently established on the basis of the open shop.

Clay products are moving at a good rate in Chicago and considerable face brick business is being reported. Joe Sullivan, manager of the brick department of the Wisconsin Lime & Cement Co., says that business is excellent. This company is supplying 1,000,000 face brick on a building project comprising a number of brick apartments and approximately 900,000 on another job. Several other face brick concerns in the city are doing a fair business.

The volume of permits continues approximately the same, no let up having been noted on account of the close proximity of cold weather.

LOUISVILLE PRACTICALLY EVEN WITH LAST YEAR

Reports from architects in Louisville, Ky., indicate that a lot of new work is being figured and there are many new residences starting, which should assure fair activity during the winter. There has been some discussion locally of reducing building brick prices \$1.50 or \$2 a thousand in the winter period to stimulate all season work, however, some of the brick men claim that prices are now as low as is reasonable for the manufacturer to grant, and there is some opposition to the idea.

Building operations for the first ten months of this year totaled 2,697 permits, valued at \$6,688,450 in Louisville proper, while more work was done in the suburbs, not included, than in any previous year on record, due to growth of the city. This record for ten months far surpasses that of any year in the past five.

Many large industrial and commercial organizations in Louisville have claimed all year that in tonnage they were ahead of last season, some being up even in dollars and cents. Such claims are borne out in reports of the local clearing house show-

ing clearings this year to date of \$1,009,624,312, as against \$1,344,741,017 last year.

IN LOS ANGELES AND SOUTHERN CALIFORNIA

In Los Angeles, permits for October came to nearly \$10,000,000 and the next few months bid fair to run over this total. Several large projects are hanging fire and it is expected that within the next 60 days a \$7,000,000 hotel will be started. A \$1,500,000 business and office building will be begun soon, plans and specifications having been completed.

Pasadena, Cal., is boasting a building boom, and permits during the month of October total over \$1,000,000.

Glendale, a suburb of Los Angeles, has again broken its record with building permits totaling over \$400,000 in October.

Building in the vicinity of San Francisco has been going forward gradually, but surely since the settlement of the builders' strike early in the autumn season. The United Material Co. furnished common and face brick for a new \$75,000 apartment and a number of other buildings.



Coal Prices in Important Fields

Coal prices in some of the important fields, as taken from the "Black Diamond," are as follows:

"Southern Illinois, including Saline, Franklin and Williamson Counties, mine run, \$2.75 to \$3.40; No. 3 and 4, \$2.50 to \$3; No. 5, \$1.25; screenings, \$1.25 to \$2.85.

"Indiana fields, prepared sizes, \$3.25 to \$4; mine run, \$2.25; screenings, \$1.35 to \$1.75.

"Central Illinois, prepared sizes, \$3.75 to \$4; mine run, \$2.50 to \$2.75; screenings, \$1.25 to \$2.25.

"Peoria district, prepared sizes, \$3 to \$3.50; mine run, \$2.75; screenings, \$1.50 to \$2.25.

"Spring Valley, six inch chunks, \$4.50; on contract, \$3.85.

"Prices in Columbus, Ohio, fields are as follows: Hocking lump, \$3 to \$3.50; Hocking mine run, \$2.10 to \$2.50; Hocking nut, pea and slack, \$1 to \$1.25 f. o. b. mines.

"Quotations show Harlan and Southeastern Kentucky, prepared, \$3.75 to \$4; mine run, \$2.25 to \$2.40; screenings, \$1.25 to \$1.35. Hazard and Northern Kentucky, prepared, \$3.50 to \$3.75; mine run, \$1.85 to \$2.25; screenings, \$1.10 to \$1.25; Western Kentucky, prepared, \$2.75 to \$3.75; average, \$3; mine run, \$1.85 to \$3; average, \$2.35; screenings, 30 cents to \$2.50; average, \$1.07.

"The prices range on central Pennsylvania coals on a net ton basis f. o. b. mines have been about as follows: pool 1, \$3.25 to \$3.75; pool 9, \$2.50 to \$3; pool 10, \$2 to \$2.50; and pool 11, \$1.85 to \$2.10."



"Construction Key to Unemployment"— Hoover

In a letter addressed to W. O. Winston, president of the Associated General Contractors of America, Herbert Hoover, at the close of the present session of the Unemployment Conference, declared construction to be the key to the present situation. For, as shown at the Conference, every 200 men employed in actual construction set to work from 500 to 700 men in other basic industries, such as brick, lumber, cement, transportation, mining, manufacturing, and so forth.



Building Materials Are Stabilized

Taking the 1913 index as 100, considerable reductions in the wholesale prices of construction materials have taken place. The sharp decline, however, appears to be over and the month of September shows a slight rise over the previous month.

The following list is taken from the November bulletin of the National Federation of Construction Industries:

	Aug., 1921 Index.	Sept., 1921 Index.
Building Materials Index.....	156.1	156.9
Brick, common, Chicago.....	172	171
Gravel, New York.....	255	255
Hollow Tile, Chicago.....	148	145
Lime, common, Average.....	220.3	220.8
Portland Cement, Buffington, Ind.....	175	164
Sand, New York.....	252	252
Bars, reinforcing, Pittsburgh.....	152.6	127
Nails, wire, Pittsburgh.....	156.7	163
Structural Steel, Pittsburgh.....	122.5	122.5
Hemlock, New York.....	153.8	153.8
Lath Spruce, New York.....	204.2	215.9
Red Cedar Shingles, Mills.....	127.1	155.6
Yellow Pine Flooring, Hattiesburg.....	141	155.4
Plate Glass, New York.....	253.5	253.5
Window Glass, New York.....	231	231
Linseed Oil, New York.....	160.7	161.2



Railroads and Steel Again Showing Life

Recent reports in business and industry seem to show that the silver lining which has been forming on the black cloud of depression is gradually assuming greater proportions. Some of the most optimistic reports are those that indicate that the steel industry is again coming to life and the railroads have apparently entered a period of extensive purchasing. The output of steel increased in October over the previous month and the railroads resumed the buying of rails and cars. Orders for more than 8,000 cars have been placed and inquiries for an equal number are pending. The coming to life of such a basic industry as steel is a fine augury for other business.



Selling Factory-Made Houses

Another idea seeking to compete with brick, tile and other building material has recently been placed on the market. The Carbo Steel Products Co., Chicago, Ill., has developed a new method of making houses in sections, factory built. The house is frame, reinforced exteriorly with steel, and with wood or steel interior studding as desired. After erection the house is to be covered with metal lath and stuccoed or plastered. A standardized house, five rooms with bath is the present basis of production.



October Building 25% Ahead of Last Year

Building contracts awarded during October in the 27 north-eastern states of the country, according to the statement of the F. W. Dodge Co., amounted to \$222,480,000. This figure is 25 per cent. greater than the figure for October, 1920, and only ten per cent. less than the figure for September, 1921, which was a record month.

Residential building still leads among the classes of construction, having amounted to \$89,650,000 in October. This was 46 per cent. of the total construction for the month.

Second in importance was the business buildings group, amounting to \$37,405,000 in October, or 17 per cent. of the total, a very good showing for this class of work.

Public works and utilities amounted to \$35,141,000 in October, about the same as the September figure.

Industrial building in October amounted to \$18,419,000, an increase of 63 per cent. over the September figure.

Contemplated new work reported in October was 24 per cent. greater than in September.

Considering the large volume of construction started within the past two months, it appears that activity will continue at a very substantial rate thru the winter months.

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

RESULTS OF TESTS ON WHITE CLAYS



THE INVESTIGATION of white clays east of the Mississippi River has been practically completed at the Ceramic Experiment Station of the United States Bureau of Mines at Columbus, Ohio. In the course of the investigation, screen analyses and determinations of viscosities, sedimentation, elutriation, fusion temperatures and color developed during firing were made.

The results indicate that none of the clay samples were similar to English china clay, which under the microscope is seen to be composed largely of plate-like particles, whereas the American clays, particularly secondary kaolins, contain more or less irregular or amorphous particles. The primary kaolins from North Carolina resemble English clay more closely in physical appearance than other clays, but have a much coarser grain and contain more free silica than English clay.

28 CLAYS DESIRABLE FOR POTTERY MAKING

Improved refining methods and intensive grinding may possibly produce a clay approaching closely English china clay. The North Carolina deposits, however, would be exhausted in a few years. The South Carolina and Georgia clays examined were principally of secondary origin, showing amorphous-like structure. The secondary clays show a much higher absorption than the primary clays, which is an objection to their use for the manufacture of oilcloth, as they require 10 to 15 per cent. more boiled linseed oil to place them in a spreading condition than the primary clays. About 28 of the clays investigated burn to a good white color, and in that respect would be desirable for pottery making.

FIRE CLAYS BEING TESTED AT COLUMBUS

In experiments on the burning strength of stoneware and fire clays made by the Bureau of Mines, it was observed that maximum strength was developed by firing to cone eight, regardless of the degree of vitrification. The tendency of these clays to weaken above cone eight may be due to the formation of sillimanite, which begins to develop about this temperature. Whether the results obtained on these clays agree with those on porcelain and whiteware bodies will be determined later.

In substituting domestic clays for foreign clays, correct measurement of the fineness of grain is important. The elutriation test is not delicate enough to measure the extremely fine clay particles of which 50 to 90 per cent. clays are constituted. A simple sedimentation apparatus for classifying these particles has been developed by the ceramic station.

In the course of a cooperative agreement between the Bureau of Mines and the Ohio State Geological Survey, the testing of fire clays of the State of Ohio is in progress at the ceramic station at Columbus. Measurements are being made of the plasticity, molding properties, dry-volume shrinkage, burned-volume shrinkage, color, overfiring temperature, and fusion temperature of these clays.

The study thus far indicates that there are comparatively few high-grade fire clays in Ohio, these coming from three different districts, namely: Dover, Moxahala and Sciotoville. Most Ohio clays fall within the class known as No. 2 fire clays which are used for such wares as face brick, chemical and household stoneware, art tile and terra cotta.

ALL TYPES OF CLAY FOUND IN WASHINGTON

Experiments along ceramic lines are being carried on at the Northwest Experiment Station of the Bureau of Mines, Seattle, Wash., in cooperation with the University of Washington, and the Washington State Geological Survey. As mentioned in the previous issue of *Brick and Clay Record*, a complete clay survey of the State of Washington has been made, 274 clays being collected and tested according to the American Ceramic Society's standard methods. Almost every variety of clay was found in this state; residual kaolin-like clays from the Spokane district; buff-burning plastic, lacustrine clays from the same district; Eocene shales from western Washington; Pleistocene red-burning clays from southwestern Washington; glacial clays from the Puget Sound area; basaltic clays from southwestern and eastern Washington; refractory clays from the Sumas, Green River, Napavine and Spokane districts; terra cotta, stoneware and buff-burning pottery clays from the Green River and Spokane districts.

MAY MAKE WHITEWARE FROM WASHINGTON CLAYS

All varieties of red-burning structural wares can be made from the shales, and the glacial, Pleistocene and basaltic clays, and if the kaolin-like residual clays from eastern Washington are used in conjunction with the feldspar deposits of northern Idaho (not over 25 miles beyond the border line), it may be possible to produce a high-grade whiteware body from Pacific Northwest materials.

On account of possessing materials that were tested in a preliminary way in this investigation, as well as the diatomaceous earth of Kittitas and Grant Counties of Wash., and Crook County, Ore.; the magnesite deposits of Stevens County, Wash.; the numerous quartzite deposits of Pierce and Stevens Counties, Wash.; the vein quartz of Spokane and Chelan Counties, Wash.; and the chromite of Oregon, the Pacific Northwest can practically become independent

for ceramic materials. Moreover, Alaska gypsum is being burned for calcined gypsum at Tacoma, and three large Portland cement plants are supplying that material for the Pacific Northwest.

During the clay-testing work at Seattle a new mercury volumeter and an oxygen-acetylene high-temperature furnace were developed.

* * *

Annual Leipzig Fair March 5-11

The Leipzig Fairs held in Germany every year have sent out their annual folder which shows that the spring fair will be held from March 5-11, 1922, and the autumn fair from August 27-September 2, 1922. In connection with the general sample fair, they hold a technical and building fair on the same days. Ceramics, building supplies and building machinery, raw material and semi-finished products for building and construction, factory equipment, trade journals and many other industries are represented at these fairs.

About 15,000 manufacturers and wholesalers exhibit in Leipzig, and over 120,000 buyers obtain their requirements there.

The Leipzig sample fair is a most prominent and remarkable institution, existing as the result of centuries of international trade. Its object is to serve the interests of international commerce, offering equal advantages to both exhibitor and buyer. Visitors at the technical and building fair obtain a good idea as to all the latest improvements, inventions and patents, economical methods in building and construction, and all time, labor and money saving devices appearing on the world market.

The meeting place for any visitors from the United States is Hotel Fuerstenhof, Troendlinring 8, where letters and telegrams should be directed.

* * *

Pottery Production On Normal Basis

Production of dinnerware and other semi-porcelain specialties, production of electric porcelain and allied products, so far as the East Liverpool, Ohio, district is concerned, is now the heaviest the district has experienced during 1921. A general survey of the situation does prove that the East Liverpool district, as a whole, is operating on a basis of 85 per cent., which, when everything is taken into consideration, may be considered a normal basis.

One of the best methods of obtaining a line on the output of the district is thru the fuel consumption records.

There are between 30 and 40 kilns being fired daily in the East Liverpool district with natural gas. Last August the low record was 13 kilns per day. The average number of kilns fired daily in the district now with gas is placed officially at 36.

It has also been pointed out that there are about 17 kilns in the East Liverpool territory being fired with oil, and that a possible 15 kilns are being fired with coal.

Since August, and during that month, there was an average of 13 kilns for the low record being fired daily, and then this number was advanced to 15 kilns, only a little later to soar to 22 kilns. Since early in October there has been a decided upward trend in the demand for ceramic products out of the East Liverpool district.

The majority of all potteries are working full time, altho here and there a particular shop may be off for a day or so thru this or that particular cause. However, the volume of business manufacturers now have on hand for dinnerware and other semi-porcelain specialties is said to be sufficient to insure steady plant operations during the balance of the year.

Numerous buyers are anticipating wants for 1922, especially for the first quarter. These buyers know full well that there

will be no reduction in the market, and are therefore placing their orders accordingly.

There has also been a decided improvement in the demand for electric porcelain ware of late, and these plants are now working on better schedules than for several months.

It has been recalled that during the slump in the electric porcelain business during the late spring and summer, the larger jobbing interests who maintained branch distributing houses thruout the country practically exhausted their stocks thru buying from houses to house.

This scheme, however, kept new orders away from the various plants. Now that the warehouse stocks of the distributors have been practically exhausted, branch managers are compelled to replenish their bins, and this is reflected by the receipt of new orders by the manufacturers of this extensive line.

So far as the market on semi-porcelain products is concerned, it is decidedly firm. Selling lists were forwarded the trade, effective as of September 1, and there is no chance for a change for at least a year. The largest buyers of dinnerware in the country fully realize the situation, and as the foreign market has an upward tendency, the American manufacturers are profiting thereby.

* * *

Potters Fight to Reduce Freight Rates

Potteries at Trenton, N. J., and vicinity are developing a campaign for lower freight rates for clay, flint, feldspar and other materials entering into the manufacture of ceramic wares. It is held that these materials are now carrying more than their share of the transportation burden at the present time and that reduced freight rates will work to the decided benefit of the ultimate consumer in corresponding reductions in the cost of finished products. A committee has been appointed, headed by M. D. Warren, traffic manager of the Trenton Chamber of Commerce; Charles Brian, Paper Makers' Chemical Co., Easton, Pa.; A. C. Hoffman, Trenton (N. J.) Potteries Co.; L. L. Lee, Star Porcelain Co., Trenton; John Manor, Golding Sons Co., East Liverpool, Ohio; F. W. Walker, Beaver Falls (Pa.) Art Tile Co., and others.

* * *

Operative Potters Elect New President

At the meeting of the Executive Board of the National Brotherhood of Operative Potters, Atlantic City, N. J., October 29, John F. Wood, East Liverpool, Ohio, was elected president to succeed Edward Menge, recently resigned on account of ill health. Mr. Wood has heretofore been secretary-treasurer of the organization and has been succeeded in this office by John McGillvary. G. A. Harrison, East Liverpool, was elected vice-president.

* * *

To Extract Chemicals from Indiana Clay

Discovery more than 50 years ago of a clay deposit in Lawrence County, Ind., by Dr. Joseph Gardner, when he was investigating a report of iron ore deposits there, resulted in incorporation at Indianapolis recently of the National Ceramic & Chemical Co., with a capital of \$300,000, to market chemicals extracted from the clay. The clay is said by engineers to contain aluminum sulphate which is purer than any which has been marketed so far. The sulphate is used in purifying water, and many tons are used in Indianapolis water each year.

The Lawrence County deposits are said to be the only similar deposits in Indiana large enough for commercial purposes. The Indiana deposits are said to be more valuable for the chemicals they contain than for pottery manufacture. Mr. Clark

indicated that later the company would branch out into the mining of pottery clay, several deposits of which are on the property.

John C. Kain, 117 North Sheffield Avenue, civil engineer for the Indianapolis Street Railway Co., is vice-president of the new concern. Common stock of the company to the amount of \$200,000 will be issued. The preferred stock will be \$100,000. No definite date has been set for beginning work on the plant at the mine.

* * *

Installs Pyrometer Equipment on All Kilns

The conversion of an old salt storehouse into an up-to-date spar plant has made it possible for the Onondaga Pottery Co., Syracuse, N. Y., to grind all its spar instead of obtaining it in the ground form. A large pebble mill and a chaser mill have been installed.

This company has recently constructed a new room where all pyrometers and burning records will be kept. All biscuit and glost kilns are connected with the burning apparatus located there. Regarding burning apparatus the "Syracuse China News," house organ of the Onondaga Pottery Co., has the following to say:

"There are three types of apparatus in use for indicating or recording temperature changes in the kilns. The first is the Optical Pyrometer, which depends upon the different colors produced in a dark object by heat; but this has the disadvantage that it can't be used until a temperature of red heat is reached and it can not readily be made recording. The second is the Expansion Pyrometer, which, as the name indicates, depends upon expansion of materials with increasing temperature, but this method is unsatisfactory.

"The third type, which is the one the Onondaga company is using, is the Thermo-Couple Pyrometer. This is based on the fact that, when certain metals of unlike electrical properties are joined together at one end and that end is inserted in the hot region (the kiln) and the other end is left in the cold, an electric pressure is created between the cold ends of the two metals so that when these ends are connected a very minute electrical current passes thru the connections. By very carefully designed and sensitive apparatus the amount of this current can be measured and indicated on a chart, graduated in degrees of temperature. Also by additional apparatus connected to the indicator a record can be made of the temperature. Thus the apparatus which we are installing makes possible the making of a record of temperature within the kilns from the light-up until the kiln is cool again."

* * *

General Ceramics Co. Has Visitors

About 40 members of the senior class in chemistry at the Pennsylvania State College, State College, Pa., visited the plant of the General Ceramics Co., Keasbey, N. J., October 28, and were conducted thru the works by Fred Whitaker, superintendent, who has recently returned from a trip abroad. The visitors expressed great interest in the chemical stoneware and other pottery products manufactured at the plant

* * *

R. Thomas & Sons Co. Elects Officers

At a meeting of the board of directors of the R. Thomas & Sons Co., held recently, officers were elected. The new officers are president, L. M. Thomas, Sr.; vice-president, G. Richard Thomas; treasurer, L. M. Thomas, Jr., and secretary, A. W. Thomas.

There has been a decided increase in the demand for the

products since the first of September and it is the opinion of the company that within a short time activity of the plants here and at Lisbon, Ohio, will be on normal schedules.

* * *

New Earthenware Export Market Found

The "Commerce Reports" of the U. S. Department of Commerce recently published a foreign trade opportunity, No. 172, concerning a retail merchant in Chile, who desires to purchase earthenware and other commodities. Further information along this line can be gained by any interested parties from the Bureau of Foreign and Domestic Commerce of the U. S. Department of Commerce, Washington, D. C.

* * *

Pottery at Evansville Again Working

The National Pottery at Evansville, Ind., has again resumed work, after an idleness of two months. The pottery employs about 200 men in normal times and almost the entire force has been reemployed.

* * *

Wheatley Pottery Changes Location

The greatly increased demand for Wheatley garden pottery and faience tile has necessitated the removal of the Wheatley Pottery Co. from its old place to 4609 Eastern Ave., Cincinnati, Ohio. New and beautiful designs and effects in both products will be added to the present lines.

* * *

Will Make Chinaware in Indiana

The Columbia China Corporation, Porter, Ind., has been organized under state laws with capital of \$500,000, to manufacture chinaware and other ceramic products. The incorporators are J. R. Mendelson, E. T. Morris and Anton Schmidt, all of Porter.

* * *

Floor and Wall Tile Plant Enlarging

The Robertson Art Tile Co., Morrisville, Pa., manufacturer of floor and wall tile, has perfected plans for the erection of a two-story addition to its plant, 50x100 feet, estimated to cost about \$20,000.

* * *

To Make Pottery from Coal Mine Refuse

Shale from the coal mines at Henryetta, W. Va., which has heretofore been considered as refuse by the coal operators, will soon be used in the manufacture of pottery. It is said that West Virginia interests are organizing a pottery company to make use of this shale.

* * *

Has Purchased Additional Land

The New Jersey Tile Co., Brunswick Street, Trenton, N. J., manufacturer of vitrified floor tile, has acquired two plots of land in the vicinity of its property at 519-523 Mulberry Street, to be used in connection with operations.

* * *

Capital Stock Has Been Quadrupled

The Beaver Tile & Specialty Co., 442 West Forty-second Street, New York, has arranged for an increase in capital from \$45,000 to \$200,000. George B. Staples is president.

The SUPERINTENDENT

Helpful Hints for Practical Men
Whose Problem is Maximum
Production With Minimum Cost

Efficient Power Transmission by Belt Drives

The best results from belt drives cannot be expected without a full knowledge of the different factors which determine the transmitting capacity. Assuming that the belt selected is the proper one for the purpose—and this is one of the most important things to consider—the factors affecting the transmitting capacity of the drive are: the conditions under which the drive must run, the speed, the nature of the drive, the arc of contact between belt and pulley, the conditions of the belt and the efficiency of the pulley.

In the standard tables from which the horse power of a drive is usually figured the ratings are for normal conditions. Often conditions are not normal. Dampness may form a film on the pulley and have the effect of lubricating the contact between the belt and the pulley. This frequent cause of slippage can be offset by using pulleys which are not subject to condensation. Where oil cannot be kept off of the belt much can be accomplished by selecting the proper pulley and keeping the belt and pulley clean. Where there is dust special care must be taken to keep the belts clean. If it collects the belt will roll over the pulley without gripping it. Sticky dressing collects the dust in a cake on the surface of the belt. Such dressing may help temporarily but it inevitably reduces the efficiency of the drive. Proper procedure is to use pulleys with maximum efficiency, to keep the belts clean and flexible and to avoid entirely the sticky dressings.

Standard tables specify the tension on which the rating is based. This tension applies to the strength of the belt. It may or may not be the economical tension for the particular drive. It is always desirable to run belts slack. If the tension recommended by the belt manufacturer is used there is assurance that the belt will last but if this tension is greater than is required there is an unnecessary friction load on the bearings and a waste of power to overcome it. If the tension on the belt can be reduced less power will be consumed. For this reason it pays when designing a new drive to get the most

efficient pulley rather than the pulley which can be obtained at the lowest first cost. Operating cost continues indefinitely. First cost occurs only once. Increasing the tension of the belt may increase the transmitting capacity of the drive but beyond a certain point this will be entirely offset by the increased friction load.

The amount of power which can be transmitted by a given drive is directly in proportion to the speed. With certain limitations if you double the speed you double the capacity of the drive. The most economical speed is approximately 3,500 to 4,500 feet per minute. At higher speeds centrifugal action is likely to reduce the efficiency. Very low speeds are not economical because of the large belts and pulleys required.

The open horizontal drive with the tight side of the belt on the bottom is ordinarily the best. On such a drive as the load increases the belt sags on the top side and increases the arc of contact. When the tight side of the belt is on the top increasing the load decreases the arc of contact and reduces the transmitting capacity of the drive. Crossed belts theoretically increase the contact. As a matter of fact on account of the twisting of the belt the increase is not as great as is sometimes supposed. The efficiency of this type of drive is reduced by the friction at the point where the two sides cross. The quarter turn drive gets a smaller arc of contact and consequently less efficiency than is obtainable with an ordinary open drive. The vertical drive requires comparatively high belt tension because of the tendency of the belt to hang away from the pulley at the bottom. This same condition prevails to a less extent on the diagonal drive.

Transmitting capacities given in standard tables are based on an arc of contact of 180 degrees. If pulleys are of different sizes the transmitting capacity of the drive will be determined by the contact on the small pulley. In figuring the transmitting capacity it is well to allow a little more than the proportional loss of contact.

To give the maximum efficiency belts must be kept clean and flexible. This is the only way in which full contact can

Points in Cooling Clay Ware in the Kiln

In the burning of clay ware it is of interest to know what is happening with regard to the color of the product as it is passing thru the different stages of burning. The color of a red burning brick clay becomes darker as the iron changes from ferric to ferrous.

Iron has the property of reverting back to ferrous oxide which is an exceedingly powerful flux. In the case of a brick which is usually strong and not sticky but is changed so that the iron is in the ferrous form, it becomes sticky in this case.

What is commonly called "flash" is a combination of oxidizing and reducing conditions in the kiln and the cooling of the kiln itself has an effect on the final color. The first 500 to 600 degrees drop of temperature after the finish of the burn is important in bringing out the color. After cooling from 1,900 degrees to a temperature of 1,300 degrees there is little danger of reoxidation in obtaining brown colored face brick.

In paving brick and porcelain manufacture, clay forms a compound known as sillimanite and by dropping 600 immediately after maturity, a structure of small crystals is formed which is stronger than when the clay is subjected to slow cooling in which case long crystals are made. This is a point which has not been given much attention in the burning of clay ware. In fact, it is a direct contradiction to the views held by many paving brick superintendents but it is the opinion of no less an authority than A. V. Bleininger.

be obtained between pulley and belt. If belts are stiff they are likely to wrinkle. If they wrinkle the contact is invariably poor. Dirty belts have low efficiency and because of their roughness get poor contact with the pulley. If dirt collects it should be scraped off and the belts should be treated with a small amount of dressing which will lubricate the fibres, prevent internal wear and maintain the flexibility without caking the surface of the belt and collecting more dirt as a consequence.

The efficiency of the pulleys has a direct bearing on the transmitting capacity of the drive. Different materials differ greatly in frictional efficiency. The comparative efficiency of the different types of pulleys is shown in the following table compiled by Geo. H. Perkins, Lowell (Mass.) Textile School, in which the most efficient pulley is rated at 100 per cent.

	Per Cent.
Cork insert pulleys.....	100
Paper pulleys	85
Leather covered pulleys.....	73
Steel pulleys	70
Wood pulleys	69
Cast iron pulleys.....	65

This comparison is based on the amount of power which can be transmitted by the same drive under the same conditions with two per cent. slip, which is the commercial allowance for the creep of the belt which cannot be avoided. From this the great importance of the type of pulley selected is evident.



Cutting Wire Rope

The next time it is necessary to cut cables or wire rope, the following method might be tried. First, securely bind the rope on each side of the place to be cut. Place the cable over a length of old railroad rail or a piece of steel; then cut by means of a coal cutting chisel with handle and a sledge hammer.

Of course, where it is necessary to cut rope frequently, it would be advisable to secure a wire rope cutter.



Drain Tile Men Advertising for Business

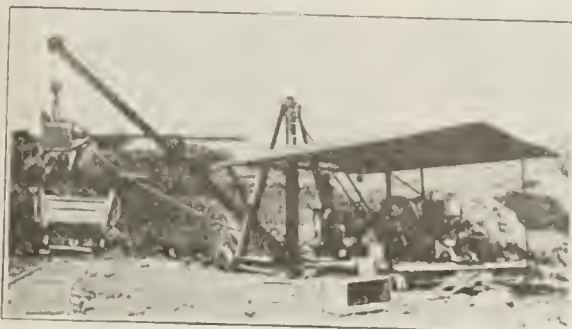
The Ohio Drain Tile Association, thru J. C. Poling, secretary, of Ada, Ohio, has issued four pamphlets edited by Leo R. Nelson, of Beaver Dam, Ohio, to acquaint the farmer with the benefits of land drainage and the methods to be pursued in installation. The members mail these at intervals to their customers and the entire series covers practically every point about land drainage. Some of the subjects treated are the benefits of tile, the necessity of tiling, how tiling gives the proper water, air and heat supply to growing plants and how tiling affects the growing season.

There are also two interesting questions that are discussed—"How much does a wet spot cost?" and "Did you ever know a man to prosper farming wet land?"

The Ohio Drain Tile Association is living up to the opinion expressed some time ago that the farmer knows that this is not leap year—in other words, that if anyone wants any business from the farmer at the present time he must go out and propose the subject to the farmer. The latter at present is backward like a bashful girl, and would not think of bringing up such a subject if possible to avoid it.

These booklets are adding considerably to the present business of the members of the Association, and they expect much in the future when the full benefit of the educational campaign is realized.

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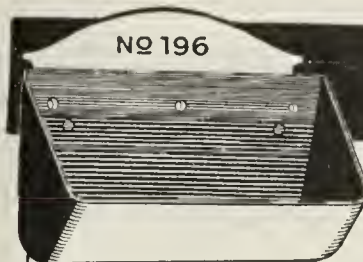
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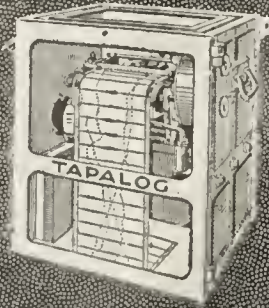
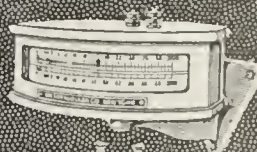
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Address all communications intended for this department to "Editor Questions and Answers," care of "Brick and Clay Record," Chicago.

Warm Water Versus Cold in Tempering

1,001. Iowa—We would be pleased to know if you could direct us to some company, or perhaps you could tell us what advantage it is to use hot water instead of cold water to temper our clay for stiff mud product.

Do you get any better results in tempering clay; that is, will clay mix to a more uniform consistency?

The advantage of using hot water consists of, first, increasing the plasticity of the clay. This increases the temper with the same equipment.

Another advantage consists in the fact that the ware dries more safely when the brick are heated. The fact that warm water has been used enables the water from the center of the brick to reach the surface, and evaporate quicker, easier and with less loss.

The following on the same subject appeared in our magazine in 1915:

Many brick manufacturers are aware that clay passes more readily thru the machines when it is warm than when cool, but few have ever thought of applying this observation to improving the quality of their goods or to facilitating their production. One reason is the cost of heating the water and clay, and other is a disinclination to try anything new.

One enterprising manager has recently taken a branch from the steam pipe used to provide steam for lubricating the die or mouthpiece of the brick machine, and connected this branch to a couple of holes tapped in the bottom of the pug-mill about one-third of the length from the exit end of the mill, the two holes being about five inches apart. The steam pipe was one inch in diameter from the boiler to the mouthpiece, but at the latter it was reduced to a one-half inch pipe. The two branches leading from the pipe to the openings in the pug-mill were, therefore, made of three-eighths inch pipe. The steam discharges directly into the pug-mill, the pressure being sufficient to keep the clay out of the pipe.

The brick come out of the machine at a temperature which is not so high that they cannot be handled by the men, and yet is sufficiently high for the men not to be able to hold them for more than a moment. The reduction in the power required to drive the pug-mill is quite noticeable in the clay referred to above, and it was also found that less oil is required for lubricating the brick as they passed thru the mouthpiece when oil was used instead of steam in the latter. Tho no accurate tests have been made, the workmen declared that the quality of the clay is improved and that it becomes more plastic.

✕ ✕ ✕

Utilizing Clay for Alumina Content

1,004. Missouri—Is fire clay that assays 28 per cent. alumina considered of value for the aluminum it contains? If not, what per cent. does the Arkansas clay of commercial use run?

We doubt very much whether this clay could be used as a source of aluminum. There are many clays in this country

and ANSWERS

Best Authorities in Every Clay working Branch Are Called Into Consultation—Their Advice is Free to You, Thru These Columns

Should a reply be desired by letter, send a stamped and addressed envelope with your question, and it will be answered promptly.

that have a content of alumina as high as 46 per cent. that are not suitable as a source of the metal aluminum. The separation of aluminum in the manufacture of the metal is dependent principally on the ease with which that element can be separated from iron and silica. It seems that your clay would be much better suited as a source of flint clay.

We would suggest that you have your clay tested in the Ceramic Department of the University of Illinois at Champaign or the Ceramic Department of the Iowa State College at Ames, Iowa.

We are sorry that we cannot encourage you in your plan to market this clay as a source of aluminum.

✻ ✻ ✻

White Glaze Disappears During Burning

1,006. Kentucky—We have been having some trouble with glazing our ware and I am sending two samples. One is a trial piece and the other a piece of a small butter pot. It seems that the glaze at times does not fuse. Some entire kilns produce no gloss on the white glaze, except on the inside of the ware or on the ware that is in saggars. Sometimes it seems to be worse in the tops of the kilns and the bottom is good. This only happens at intervals, and some kilns will come fine one burn and very poorly the next time. The two pieces that I am sending are of the same glaze, containing spar, flint, whitening, ball clay, zinc and borax.

I have worked at several large plants, but this is the first time that I have been confronted with or ever heard of this trouble. I have tried almost everything to overcome it, but have had no success. We burn with coal, and sometimes I think that it is something in the coal which causes this trouble partly because it shows only on the portions that are exposed to the flame. At times I feel we do not have draft enough, but considering all of this I cannot understand why some burns turn out very fine and others very poorly. At times I am of the belief that the body does not vitrify enough, and it absorbs the glaze, because the ware appears as if no glaze had been applied to it. The dark glaze always comes out fine.

I tried one kiln by adding flux to the body in order to increase the vitrification, but this did not help it. Possibly I did not add sufficient flux, but at that it seems strange that one kiln would turn out so good and the next time the very same kiln will turn out very poorly.

It seems that the trouble starts just before fusing point, as it is easily noticed that as soon as the first trial piece is drawn if there is anything wrong the black glaze will show a start of fusion and the white glaze will appear dead. When this occurs it is positive evidence that the result will be very poor.

We have kept every possible record of just how we fire a good kiln, and fire exactly the same way the next time, and still get poor results. At times I believe that if we used pyrometers and would either hold our heat at about 1,500 deg. F.,

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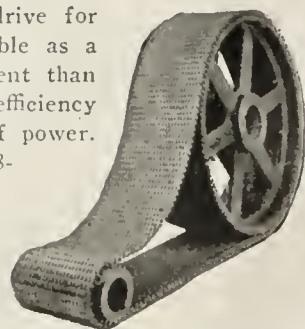
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LINK-BELT

Silent Chain Drives

Link-Belt Silent Chain is the ideal drive for clay working machinery. It is "flexible as a Belt, Positive as a Gear, More Efficient than Either." It shows highest sustained efficiency of all mediums for the transmission of power. Learn more about it. Send for 128-page price list data book No. 125.

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Will keep your pit free from water. Pumps continuously without attention or adjusting. Handles any fluid up to 40% solid when agitated and is particularly suited to Clay Plant needs.

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Mortar Colors

Home builders demand a beautiful color with their brick. Ricketson's colors give brick charm, freshness and warmth in appearance.

Red, Brown, Buff, Chocolate and Blacks—other tints made by combining.

40 years proves their permanency.
For Brick, Mortar, Cement, etc.

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Milwaukee, Wisconsin

"1922 Will Reward Those Who Lower Their Production Costs"

Every Clay Manufacturer should have a copy of "Clay Plant Construction and Operation," in his library. It is a timely text book containing a wealth of practical information on Labor Saving equipment, efficiency methods, etc.

The price of this handsomely bound volume is \$4.00 pre-paid.

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Brick and Clay Record

407 S. Dearborn St.

Chicago

or raise the temperature very slowly from 1,500 to 2,000, we would obtain better results.

When we draw trial pieces before the fusing point has been reached, the glaze looks fine and gives no sign of trouble. We burn to 2,300 degrees and use cones to determine the temperature.

After a careful consideration of the phenomena which you described in your letter, two men who have had a wide experience with glazes have agreed that the trouble lies in the kiln condition. It seems that you have too strong a reducing condition preceding your vitrification. This may cause the borax in the glaze to fuse out, and may also cause sulphur trouble.

They suggest that you carefully go over the draft conditions in your kiln and if necessary enlarge the draft flues. It is suggested that you burn at nearly neutral condition until vitrification, and then produce the reducing conditions that are required in the burning of stoneware.

After carefully considering the conditions described, Professor Parmelee, of the University of Illinois, stated:

"I believe the dulling of glaze is probably due to the action of sulphur during the burning operation. This may occur during the early period of the fire or, as I have reason to believe, even during the finishing. Of course, during the early period the sulphur would be very active in attacking borax and the action would proceed much more rapidly than later. It seems to me that if a draft gage and a pyrometer were used during the firing, the most favorable condition for firing a glaze could be determined. Glazes containing manganese are useful indicators of the presence of sulphur fumes. This glaze may be applied to draw trial."

* * *

Oil As Fuel for Burning

1,003. Georgia—Would you be good enough to give us what information you can in regard to burning shale brick and tile with oil, its advantages and disadvantages, comparative cost and gallonage consumed per thousand brick. Also if paving brick are being successfully burned with oil?

The important factors to be considered before installing oil burning equipment are as follows:

First: Possible supply and means of transportation. For a long time the steady supply of fuel oil has been unreliable. Tank car shortages have occurred, causing serious delays. To overcome this, it is necessary to have a storage tank or reservoir. However, in most cases the cost of this tank is considerable and there is a strong temptation to make it as small as possible and then worry and hope that the car supply will be regular enough to prevent a shortage. These conditions obtained during the war period and previous, but it has been claimed that fuel oil has been plentiful during the past year, and no trouble experienced with getting a satisfactory supply. If the manufacturer can get a guarantee of a continuous supply he will dispose of one of the greatest objections to the use of fuel oil.

Second: In general, the equivalent of oil in terms of coal is from 3½ to 4 barrels per ton. Where the same degree of efficiency is used in burning both fuels, coal at \$3.50 is approximately equivalent to oil at \$1.30 a barrel. By knowing the exact heat value of the coal now in use and the heat value of the oil to be used, it is easy to determine the relative cost in terms B. t. u. of coal and oil.

Third: Another item which must be considered is that of equipment. The use of fuel oil means a considerable investment for storage, pumping, distribution pipes, burners, atomizing agents, and so on. The atomizing agents may be either air or steam, but in either event will require more boiler capacity and power than is used when coal is being burned. Under present prices for materials, it will cost approximately \$6,000 to equip a plant containing 15 round down-draft kilns

and providing for sufficient storage to assure a factory of an uninterrupted supply.

A fourth point is in regard to labor. The comparison varies widely, and it is difficult to make a general statement. The labor for oil in firing is much less than for coal firing, and the quality of work is so much better that it is possible to get higher grade men for handling oil than coal in small plants. In general, one man will take care of an 18 kiln plant at night; and a burner and helper in the day time; the helper to take care of cleaning burners, tearing out wickets during cooling, and so forth. When three shifts are the practice, one more man is required for the third shift. The labor cost of handling coal is greater than the labor cost of handling oil, but the cost of pumping and atomizing oil is higher than is generally thought to be the case.

The percentage of No. 1 ware, its quality, and the speed at which the kilns may be turned over, are points very much in favor of oil. They do a great deal toward counterbalancing the high cost of installations. When oil is being considered for an old plant the increased production of the kilns should be considered, especially if the rest of the plant is of sufficient size. If, however, the kiln capacity was previously larger than the shop, this point would not be of as great importance.

To sum up the advantages of oil over coal, it may be stated that:

1. It possesses the possibilities of a long flame and is unprotected by producer gas in this respect.

2. It is capable of developing an intensely hot fire, which allows quicker heating up of a furnace and kiln. This advantage is of special value in quickening the schedules of burning and saving time in kiln turn overs; and since the coal consumption on a kiln is nearly directly proportioned to the length of burn, it is possible for some wares to nearly equalize the difference in price of the fuel by overcoming the lags in temperature due to the periodic hand firing of the coal. This advantage of an intense heat has also proven of great value in salt glazing of brick and hollow ware.

3. There is no cleaning of fires, no handling of fuel, no removal of ashes, no soot and no dust. The first of these makes the procuring of labor much easier and where kilns are located closely together or congested in buildings, the cost of getting coal to the kilns and removing the ashes assumes such proportion that it almost offsets the economy produced in the purchase of the cheaper fuel. In cities where smoking ordinances are troublesome, and ash removal expense a large item, fuel oil can be substituted for coal with very good results.

4. On plants of ordinary size, the oil system will reduce the number of men employed in burning in the ratio of seven to two.

5. Oil can be stored in 50 per cent. of the space required by coal.

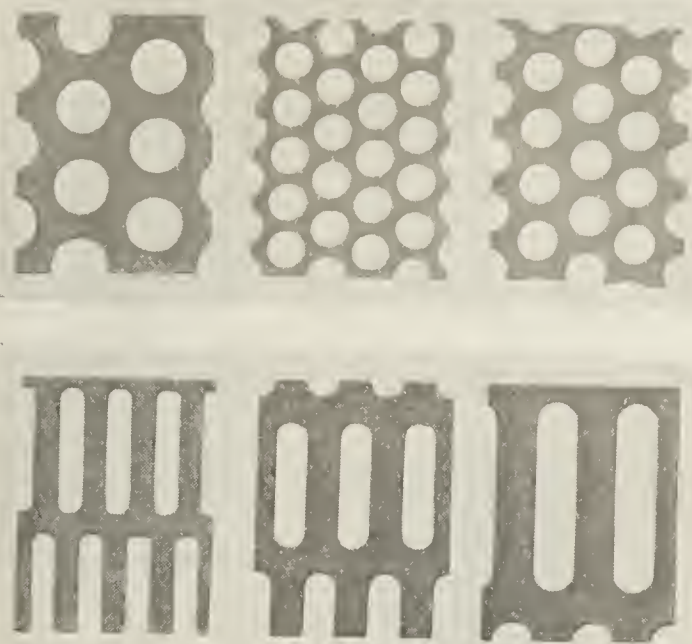
6. Burning stages and temperatures are very easily controlled, and a decidedly more constant rise of temperature is possible with oil than with coal, the different stages of the burning are handled with much greater ease, alternate oxidizing and reducing conditions can be produced at will and easily controlled.

7. Unfortunately, because of the better control of firing and the steady progressive rise in temperature, without the periodic lag of more fire, a higher percentage of No. 1 ware is obtained by the intelligent use of oil as compared with coal.

There is at least one paving brick company burning its ware with oil, but we do not recall the name of the concern at present.

A Canadian brick manufacturer, who formerly used natural gas, which is an ideal fuel to burn common brick, recently changed over to oil firing. With natural gas it formerly took eight days and eight nights burning to complete a 400,000 brick kiln. With natural gas 7,000 cubic feet were found necessary

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Gravel, Stone and Cement**

All sizes and shapes of holes in metal of proper thicknesses to give the best screening results.

Sheets furnished flat or rolled to shape for revolving screens.

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NEW YORK OFFICE: 114 Liberty St.

You won't have to worry about competition if you treat your clay with

R. H. Precipitated Carbonate of Barytes

You can safely guarantee that your brick will be

Scum-Proof

You can get a higher price and influence architects to specify your product because Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's dependable.

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of high grade chemicals
for the clay industry*

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Electric Motors and Generators

for all requirements of the
Brick and Clay Industry



BURKE ELECTRIC CO.

MAIN OFFICE AND WORKS
ERIE PENNSYLVANIA

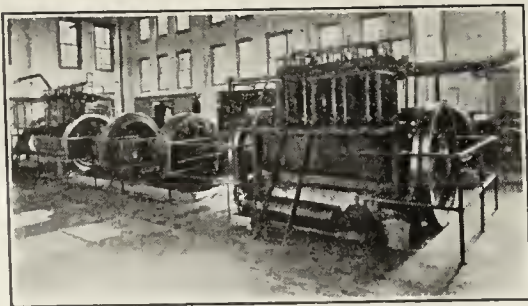
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Two 135-H. P. Units

GAS ENGINES

For Belt Drive or Direct
Connection to Generators

If in need of power and located in natural gas district, or if your power costs you over $1\frac{1}{4}c$ Per K. W. Hr., write

Hope Engineering & Supply Co.

Pittsburgh, Pa. MT. VERNON, OHIO Tulsa, Okla.

to burn a thousand brick. Taking gas at 45 cents a thousand, the cost of burning was \$3.15. Natural gas had been found cheaper than coal for burning.

Since installing the oil burning system, burning time has been cut one-half; that is, down to four days and four nights. Approximately 18 gallons of oil were required to burn 1,000 brick. With fuel oil at seven cents a gallon, it required this manufacturer a total cost of \$1.26 for each thousand brick burned. This is a saving of \$1.89 over natural gas burning, or a saving of more than one-half.

The LETTER BOX

A Place Wherein Letters
That Have General Interest
Are Published and
Commented Upon

W. F. Godejohn Replies to G. W. Greenwood

Following the letter, published in the last issue in this department, by G. W. Greenwood, criticising some of the statements made by W. F. Godejohn in his article on "Payment of Bonus to Pipe Press Crews" the following defense of his article has been received by *Brick and Clay Record* from the author, Mr. Godejohn:

"It was with interest that I read in the 'Letter Box' of the November 1 issue G. W. Greenwood's remarks under 'the caption 'Figuring in Percentage' is Dangerous.'

"It is quite evident that Mr. Greenwood has viewed the problem from the viewpoint of an accountant. He has used, in order that he might prove his case, hypothetical cases such as are impossible. He seems to have overlooked the fact that 'Standards' are not an estimated goal to which we are working, but a goal established as a result of analytical study and the use of a stop watch. If we determine an output of, say 702 six inch pipe per hour and a labor standard to produce the output of say 13 men, it would be impossible to add several men and actually produce six inch pipe at the rate of 200 per cent. of standard. The output standard is determined by the rate at which the particular press in question can, in view of existing conditions, produce pipe. This being the case, more pipe cannot be produced by increasing the number of men used, since two pressmen could not, with a single press, produce more pipe than could a single pressman.

"On the other hand, the force could not be reduced below standard for the reason that each man of the crew has specified duties and should one man be taken from this crew his specific duties would remain undone. In other words, each man has a job to perform and the crew as a whole is a team, with each man at his post.

"In brief, had Mr. Greenwood viewed this problem from an engineering standpoint he would not have felt that percentages are an impossible means of measuring shop efficiencies."



Ten Billions Invested in Vehicles

According to a bulletin issued by the National Research Council, there are now ten billions of dollars invested in self-propelled vehicles. The turn-over is three billions annually. The bulletin states that there are ten passenger vehicles to one freight vehicle, and that problems of speed and safety are most important; that the annual expenditure for operation of vehicles was 12 times the annual expenditure on the roads; that transportation by self-propelled vehicles is the most expensive of all commercial forms and it will increase. Everyone pays for inefficiency, therefore the field of research on the cost of vehicle operation arising from the road surface and from the vehicle itself must be kept in the foreground.

IN *the* WAKE of *the* NEWS

Being Brief Mention of a Host
of Interesting Happenings in the
Varied Fields of Clayworking

E. J. Mercier, Pioneer Brick Maker, Dies

Edward J. Mercier, a pioneer brick manufacturer at Plainfield, N. J., died at his home in that city, on October 25.

H. C. Cramer Recovering from Illness

A recent report from Lexington shows that Harry C. Cramer, head of the Lexington (Ky.) Brick Co., is considerably better. Mr. Cramer has been sick the greater part of the year, his principal trouble being a severe attack of rheumatism.

I. E. Burkett Recovering from Accident

I. E. Burkett, who was taken to the hospital after an accident with a street car, as announced in the previous issue of *Brick and Clay Record*, is recovering rapidly. Chief trouble is now with the right arm which was badly bruised and infected. Mr. Burkett was in a semi-conscious condition for two weeks and it was at first feared that his skull was fractured. Mr. Burkett is manager and chief engineer of the Schofield-Burkett Excavator Co., Macon, Ga.

A. L. Biddle Commits Suicide

Austin L. Biddle, cashier of the Hydraulic-Press Brick Co., at Brazil, Ind., committed suicide at his home recently by taking poison. Worry over financial matters was given as the cause of the suicide since he left a letter itemizing his obligations and directing that his insurance be used in satisfying these liabilities. Mr. Biddle was a veteran of the World War, having been a member of the Rainbow Division. He was wounded twice in action, and was gassed during the last days of the war.

Death Takes O. A. Carpenter

Owens A. Carpenter, a noted resident of Glen Cove, N. Y., passed away recently at his home at Sea Cliff L. I. Mr. Carpenter amassed a considerable fortune during his lifetime dealing in real estate and conducting valuable fire clay and kaolin banks at Glen Cove. A private line of barges and tugs conveyed this material from the Sea Cliff dock to ports along Long Island Sound and the Atlantic Coast. Mr. Carpenter was one of a long line of Carpenters who have made their home in Long Island.

Alfred Pettit in Business for Himself

Alfred Pettit has recently severed all connections with the Chestnut Ridge Corporation of New York City, after serving that concern in the capacity of secretary and treasurer for more than 16 years. Mr. Pettit is now entering the face and fire brick business on his own account in the same field in which he has always worked; that is, Greater New York and adjacent territory. He will open an office in New York shortly

CUT THE LOSS!



\$8.40 per dozen—\$96.00
per gross

caused by wasted labor, due
to sore, unprotected hands.

Des Moines Mittens and
Hand Pads will help your
men turn out a full day's
work EVERY DAY. They
are made out of the very best
split cowhide leather and will
give indefinitely long service.



\$4.50 per dozen
\$50.00 per gross

Send for a trial
dozen of each. Try
out a pair on the
hands of one of your
men and if not satis-
fied return the re-
maining pairs at our
expense. Absolutely
no obligation.

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Hard Usage and Continuous Service

It does not affect the efficiency of the
**MARION RUST SPECIAL FEEDER-
MIXER.**

This machine is made to stand up un-
der all conditions. It embodies so many
good points, such as labor saving, time
saving and better mixing that we want
you to know all about them.

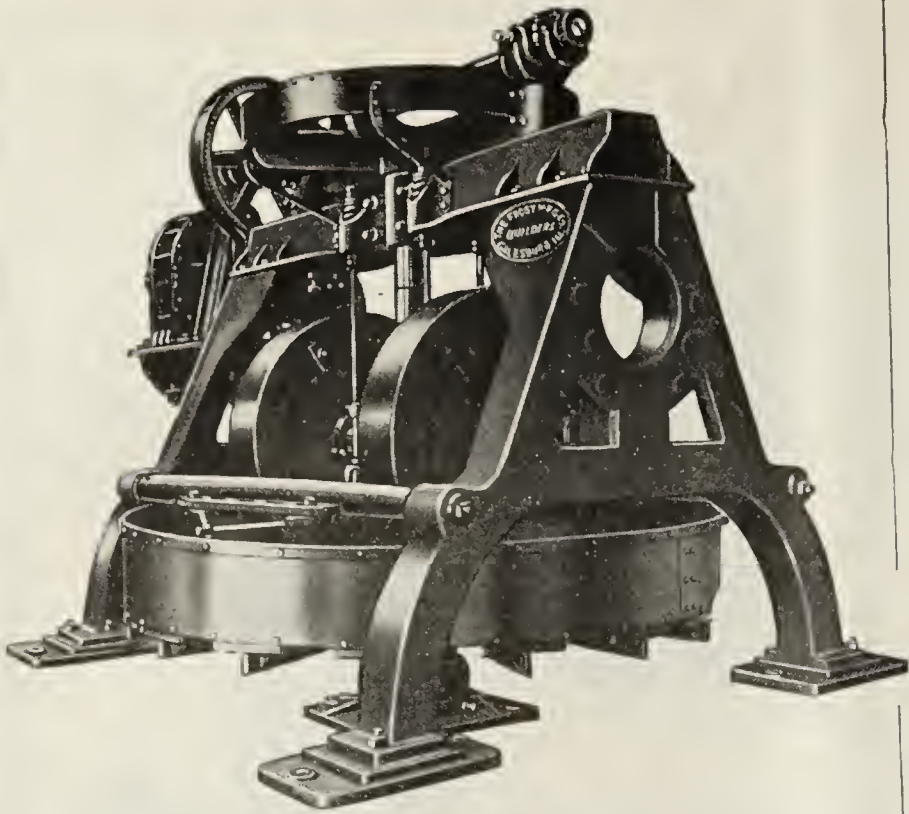
Let us send you information concern-
ing this machine and **ALL MARION
EQUIPMENT FOR THE CLAY
PLANT.**

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Marion Machine Foundry & Supply Co.

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That Frost Pans aim to give you the best quality of material, workmanship and fabrication that can be obtained.

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THE FROST MFG. CO.
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PEABODY COAL COMPANY

FOUNDED 1883

OPERATING 36 MINES
 WITH ANNUAL CAPACITY
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18,000,000 TONS



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SPRINGFIELD, ILL.	PINEVILLE, KY.	OMAHA, NEB.
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ST. LOUIS, MO.	MINNEAPOLIS, MINN.	SPOKANE, WASH.
KANSAS CITY, MO.		SHERIDAN, WYO.

"PEABODY FOR SERVICE"

and has already made arrangements with a number of manufacturers in the country to handle their product.

To Attend A. F. B. A. Meeting for First Time

J. A. Rockwell, vice-president and general manager of Sunderland Brothers Co., Omaha, Neb., will attend the annual convention of the American Face Brick Association at White Sulphur Springs as guest of John T. Baker, manager of the brick department. This will be Mr. Rockwell's first visit to a convention of brick men and it is probable that he will afterwards proceed directly to New Orleans, La., to attend the National Association of Marble Manufacturers' and Dealers' convention.

Birmingham Business Continues Good

The general tendency of the market for brick and clay pipes in the Birmingham district is about stationary, there having been but few changes in prices for the past two weeks.

Business there continues good and a number of the brick and clay pipe plants are running on full time. The clay pipe works of North Birmingham is doing an especially good business. This plant is operating one hundred per cent., and is meeting with a ready sale for its output of clay pipes.

The demand for both building and paving brick is holding up well. A number of large out-of-town orders have been received during the past few days.

Acme Brick Co. Starts New Plant

The Acme Brick Co., whose headquarters are Fort Worth, Tex., has started operations at another plant located at Perla, Ark., after a year's construction work. The new plant covers 125 acres, employs 125 men and has a pay roll of more than \$50,000 annually. Face brick, fire brick and refractory shapes will be manufactured, with a capacity of 50,000 per day. This will be increased soon, so as to make the total output 24,000,000 brick annually.

All the machinery in this modern plant is electrically driven, power being obtained from Malvern, located two miles away. The company has built a railroad line from the Missouri Pacific tracks to its plant.

Buys Additional Property

The Los Angeles (Cal.) Pressed Brick Co. has recently acquired additional clay property to the extent of 40 acres, near Mojave, Cal., which will be used in the manufacture of light colored face brick at the company's Los Angeles plant. Several other properties are also being considered, one or two of which may be closed up within the next few weeks.

New Merced Plant Starts Work

The Merced plant of the California Pottery Co. started operations during the second week of October with four kilns, the first unit of 16 completed. A force of 30 is employed at the beginning and this will be increased with the expansion of the plant, the building of which will continue. The first order from the new plant was for hollow tile for the \$30,000 home of J. H. Simonson, of Merced.

Improves Plant to Make New Product

What promises to be one of the largest manufacturing plants of its kind in Southern California is nearing completion at Fourth and West Streets in Colton, Cal. Under the management of J. D. Bough, proprietor, the yards and plant of the Colton Brick Co. are being enlarged and improved preparatory

to a material trade expansion. Improvements will be completed within a short time. Mr. Bough has perfected a brick known as "Rolock," which has shown most excellent results under tests by experts. Raw material for this product is found on the site of the plant and the finished product will be sold thruout the southwest. In addition to this special patented building brick Mr. Bough will manufacture a fire and fancy brick for building purposes. His new kilns are complete in every respect.

Erects New Plant for Oil Refining Clay

The Refineries Clay Co. of California, with a capital of \$150,000 has been formed, and will have a \$50,000 plant on the property of the Stauffer Chemical Co., at East Twenty-sixth Street near Downey Avenue, Los Angeles. Garnet W. Coen, former mechanical engineer of San Francisco, is to be president and H. E. Bierce, manager and superintendent. The company controls a clay deposit found on a tract of 450 acres, known as the K-B deposit, because of the fact that Kennard and Bierce, mining engineers, are largely responsible for the discovery of the clay and the development of its peculiar qualities. It is located 16 miles below National City near the Mexican border in San Diego County. The company intends to grind this clay to 200-mesh, treat it with sulphuric acid and steam, and market it as a competitor of Fuller's earth for refining and clarifying oils of many kinds.

New Organization for Wilmington

The Geynedd Valley Clay Products Co., Wilmington, Del., has been organized under state laws with a capital of \$125,000, to manufacture fire brick, tile, and other high-grade burned clay products. Charles R. Bishop and A. M. Fox are the only incorporators in Wilmington. The company is represented by the Delaware Charter Co., 904 Market Street, Wilmington.

Take Over Large Florida Plant

Hull & Rivas, manufacturers and distributors of face brick, common brick and tile, Jacksonville, Fla., have taken over the Ludowici Brick & Tile Co., a plant manufacturing approximately 800,000 brick a month. This plant was formerly operated by the Ludowici Tile Co., prior to the entry of this country into the World War and is now being operated by Hull & Rivas as a brick plant.

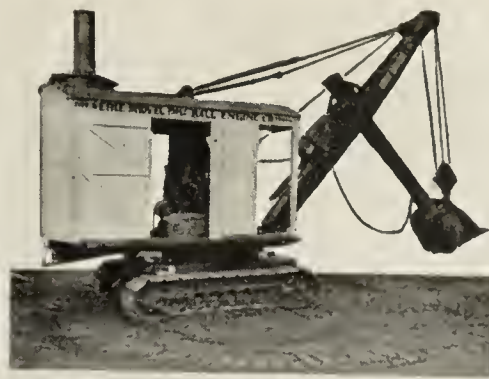
Reduces Discount Rates in Atlanta

The Federal Reserve Bank of Atlanta, Ga., early in November announced a reduction in discount rates on all classes of paper from 6 to 5½ per cent., a fact that business interests generally believe will tend to bring down interest rates thruout the sixth Federal Reserve district and prove thus of material aid to business.

Southern Plants Face Power Shortage

In order to prevent the shutting down of the industrial plants in the five southeastern states that are operated by hydro-electric power, because of the long drought the section has experienced and which has caused a drastic shortage of power, the Georgia Railway & Power Co., of Atlanta, and the Alabama Power Co., of Birmingham, have filed an application with Secretary of War Weeks, requesting permission to operate the government power plant at Sheffield, Ala. This plant, which has remained idle for some time, is capable of producing 60,000 kilowatts per day. Large users of electric power have been urged to wire Secretary Weeks urging his immediate action on the request.

The situation has really become acute, as the Georgia and



Can pivot around in one spot as shown



Perfect Power Steering from the Cab

The caterpillar type ERIE steers perfectly, by power, from the cab—making either sharp or gradual turns as desired. No man needed to walk alongside and throw clutches to steer.

The elimination of this clutch-throwing job cuts one needless man off the pay-roll. This is just one of the many ways in which the caterpillar type ERIE saves you money.

For working over soft ground, a caterpillar type ERIE means the saving of thousands of dollars for you. We would like to tell you about its many advantages in detail—and send photos. Write for bulletin B-60.

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Builders of ERIE Steam Shovels and Locomotive Cranes

And in many other ways, the caterpillar type ERIE is far superior

FULLY LUBRICATED:
Tread links and rollers are automatically lubricated by internal reservoirs.

ALL STEEL TREADS that are almost indestructible.

CLIMBS GRADES as steep as 30 degrees, and travels several times as fast as is possible without lubrication.

EASILY INTERCHANGEABLE with traction wheel mounting on the same truck frame.

IN EVERY WAY, fully up to the standard of the ERIE Shovel.

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This question when applied to the manufacture of Stiff Mud Ware deserves consideration.

The Modern Way is the Right Way

THE ROLLER PRESS for all clays, shales, fire clays, surface clays, short bonding clays and laminating shales and clays.

Brick, Hollow Ware, Roofing Tile, Floor Tile and Drain Tile can be made on the ROLLER PRESS.

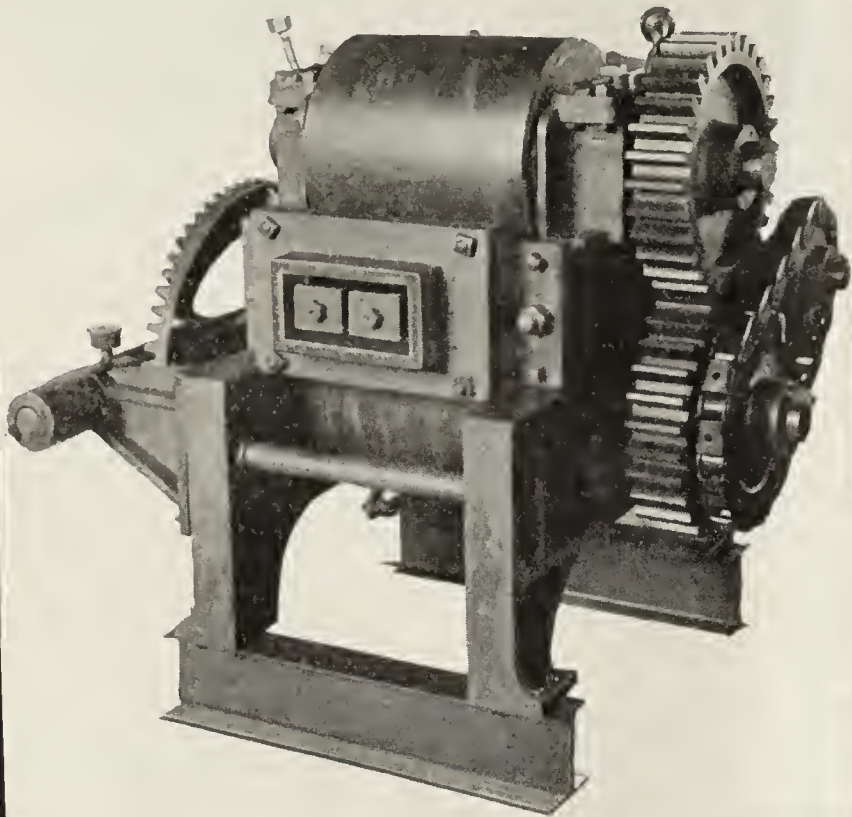
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Everything for the Clayworker.



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Bulletins
on
Request

Alabama companies, as well as all of the smaller power companies, have so little power that most of the larger industrial plants have already been forced to curtail operations where hydro-electric power was depended upon, while some have shut down entirely.

At Augusta, Ga., all of the brick plants have shut down until the situation is relieved, and others have been forced to curtail operations in other sections of the state, and in North and South Carolina, Alabama and Tennessee.

If permission is given to operate the plant at Sheffield conditions will be materially improved. What the section needs badly, however, is heavy rains that will serve to raise the rivers and streams some feet above their present levels, which are as low as they have been in many years.

Business Picking Up in Southeastern States

An optimistic outlook for general business and industrial interests in the sixth Federal Reserve district, which comprises the group of southeastern states, is the primary feature of the monthly business review of the Federal Reserve Bank of Atlanta, Ga., that has just been issued. Recent increases in the price of cotton have had a stimulating effect on all business in the section, the report states.

The labor situation continues to show improvement, tho there is still considerable unemployment in many of the industries. Only moderate unemployment is shown in Atlanta, Augusta, Columbus, Macon and Savannah, Ga., industrial improvement being noted in all these cities.

Increased building activity is reported by nearly all of the important cities of the reserve district. The majority of this activity is in home construction, tho there has been improvement also the past month in larger building construction, mainly including apartment houses, churches, schools and brick business buildings.

Illinois Company Organized in Delaware

The Tucan Clay Products Co., Chicago, Ill., has been incorporated under Delaware laws with capital of \$250,000, to operate clay mining properties and manufacture burned clay products. The incorporators are J. N. Fulton, C. W. Smith and J. M. Fitzpatrick, Chicago. The company is represented by the Colonial Charter Co., Ford Building, Wilmington, Del.

Hopes to Operate All Winter

Operations have been resumed at the Illinois Brick Co., Blue Island, Ill., after a two months' shut-down. Indications point to a steady run until Christmas, and Superintendent Kasten has hopes of operating all winter. Indications are that the Chicago (Ill.) Brick Co. will have a late run this year. Shipments are being made just as fast as the brick are turned out.

May Build Plant Employing 1,000 Men

Certain business interests who now have clay products plants at Birmingham, Ala., Seattle, Wash., and Muscatine, Ia., are now considering a site at Hannibal, Ill., for the erection of another factory. If this town is decided on, it is said that the concern will build its largest plant there. It is stated that if the location at Hannibal is secured, work on the erection of the new plant will be begun immediately. A report states that the plant when completed will employ approximately 1,000 men.

Blaze Causes \$12,000 Damage

Fire which is said to have started in the boiler room did damage estimated at between \$10,000 and \$12,000 to the plant of the Current Tile Co. at Red Key, Ind. The plant was not

located on any water line, and the chemical apparatus of the fire department was ineffective. Insurance was carried by the company and rebuilding will probably begin soon.

Hydraulic Press Plant Running to Capacity

In the face of the depression in the building industry, Mercer County, Ill., has one of the few plants in the country that are running to capacity. This is the Shale City plant of the Hydraulic-Press Brick Co., where brick is being shipped as fast as it is made. The company owns a coal mine within a quarter of a mile from the plant. While this coal is low grade, it can be used for the bulk of the firing. Raw material is obtained from a hill which has been dug away so that it is now several hundred feet from the plant. The upper strata is clay, with shale below it. The pit seemingly contains enough material to supply the plant for a century or more.

Shale City face brick are turned out at the rate of 60,000 daily, and are shipped all over the country, tho Chicago, Detroit, and other large centers receive a large portion of the output. This plant furnishes employment to 80 men, many of whom have been long in service.

Iowa Clay Men Seeking Rail Rate Adjustments

According to the publication "Permanent Construction," a number of manufacturers of clay products in Iowa have at considerable expense hired one of the country's most expert freight analysts to compare freight rates on clay products with those on other materials requiring a like service on the part of the carrier, and from these findings experienced freight case attorneys will argue the case before the Iowa Railway Commission, asking that they adjust the rates on clay products, which were raised much in excess of the 25 and 35 per cent. advances made effective thru the government administration of railroads and emergency tariffs since the close of the war. It is more than probable that the adjustment asked will be made.

Expect to Break Record in Clay Hauling

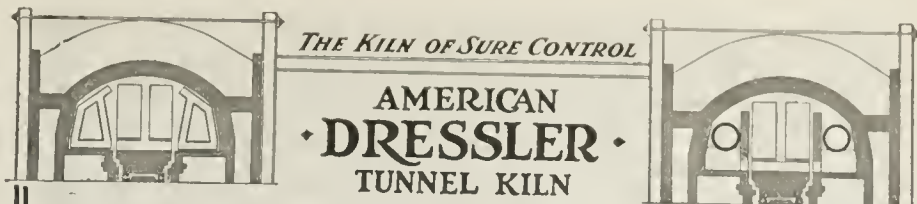
The Adel (Ia.) Clay Products Co. is rebuilding its excavator so that one man will be able to do all the work that there is to do, to develop the capacity of the machine. H. R. Straight, secretary and general manager of the company, says: "We are making another change in our clay shed so that we will have only three men between mother earth and the delivery end of the cutoff to make 150 tons of hollow ware per day. We will easily be able to do this and will probably break the world's record where clay is hauled a half mile to the plant. We have had a very fair fall business and have reduced our stock considerably, altho we have been running with part force."

New Plant Has 25,000,000 Annual Capacity

A new plant which will turn out 25,000,000 brick annually has begun operations at Pittsburg, Kas., under the name of the Metropolis Paving Brick Co. The company is incorporated for \$200,000, and M. M. Bushong is manager and president.

Kentucky Coal Fairly Cheap

Louisville brick manufacturers are well satisfied with the present coal situation. In late October price advanced a little, and the market was firmer as a result of the threatened rail strike, but prices have gone back to normal. There was another little flurry as a result of the coal miners' strikes in Indiana last week, which resulted in heavier demand on Kentucky mines. However, that also is over. Now screenings are selling at from as low as 40 cents a ton in car lots to \$1.50 ton; with mine run sold at from \$1.75 to \$2.40 a ton; and lump



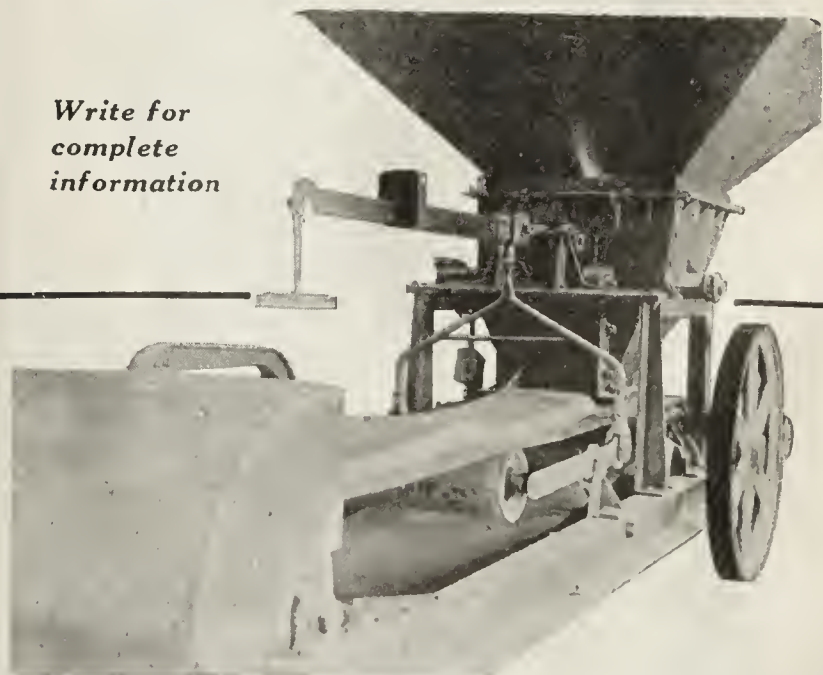
Q The sure control of Dressler Kilns makes possible greatest fuel economy.

American Dressler Tunnel Kilns, Inc.
1740 East 12th Street,
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RESPONSIBILITY!

All the responsibility of the pug mill man can be thrown upon the POIDOMETER. It will mix, weigh, and deliver your clay with 99.75% accuracy at the rate of from 1 ½ to 21,000 lbs. per minute. And, due to the perfect mix it cuts the average of defects in your finished product.

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TUNNEL KILN

Preventing Avoidable Waste

By its continuous operation the Russell Tunnel Kiln (Zwermann Patent) saves fuel and time otherwise lost in heating up and cooling down.

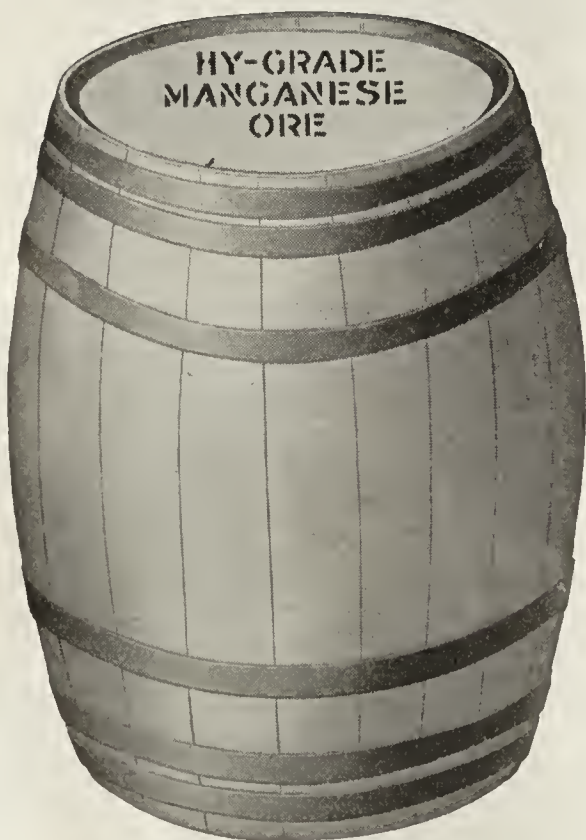
By its semi-mechanical performance, it saves labor and breakage from handling saggars and ware.

By its sturdy build, it saves repair and renewal expenses.

Write for book, *MODERN FIRING*

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HY-GRADE MANGANESE CO.
WOODSTOCK, VA.

Miner
and
Grinders

**Especially Prepared
for Brick Making**

Sales Office: CHARLESTON, W. VA.

at from \$3 to \$3.75, at mine, according to location of mine, and quality of coal. No high markets are now being predicted on coal. Many operators and jobbers anticipate a slow market until after the first of the year anyway.

Operates Coal Company

The Progress Pressed Brick Co., Louisville, Ky., now has a subsidiary, the Progress Coal Co., which has bought the business of the J. H. Beckett Coal Co., on Brent Street, near Broadway. It is expected that this plan will work in mighty well with the company's business.

To Start Brick Plant

Lester H. Crenne has purchased a large tract of land at Springvale, Me., and is to establish a plant there for the manufacture of brick and cement block. Mr. Crenne recently has returned from California.

Richmond Brick Plant Sold

The Richmond (Me.) Brick Plant property has been sold by Frank G. Connor to Hollis H. Easter. Mr. Easter also has purchased the so-called Boynton Block, a business structure on Main Street, Richmond.

Will Install New Machinery

The Patuxent Clay Products Co., 206 Water Street, Baltimore, Md., recently organized with a capital of \$1,000,000, is perfecting plans for the erection of a new plant, estimated to cost about \$150,000, on a local site for the manufacture of hollow tile and other burned clay products. Considerable new machinery will be installed. The incorporators of the company are Arthur R. Kasson, Henry N. Hanna and Herbert W. Holmes, 32 South Calvert Street, Baltimore.

Boston Brick Business Improves

The approach of cold weather is having a beneficial effect on the brick business in Boston, as many persons are hastening to complete pending work before it is too late. Brick manufacturers also credit the higher prices in New York for some of the business coming to Boston, the New York prices attracting some shippers who might otherwise send their output to the Boston market. The quoted price continues at \$17 per thousand delivered on the job.

Michigan Will Have New Plant

The Atlas (Mich.) Clay Products Co. has been organized with a capital of \$30,000, to manufacture burned clay products of various kinds. The company is headed by W. T. Shonk, Redford, Mich.; F. E. and M. B. Shonk, 1090 Sheridan Avenue, Detroit, Mich.

Nebraska Plant Starts Up

The Table Rock (Neb.) brick plant has again started operations, having secured a contract to furnish the tile for the new Polk County court house being built at Osceola.

Operates Four Plants in Nebraska

The Western Brick & Supply Co. of Hastings ranks among the foremost producers of brick in Nebraska. This concern operates four plants, two in Hastings, one in Nebraska City and one at Holdrege. 100 to 125 men are employed at the two Hastings plants when running to capacity, which is 24,000,000 brick and tile annually. Especially heavy sales are made in

Nebraska, but regular shipments are made to Kansas, Colorado, Wyoming, South Dakota and Iowa.

This concern shares its offices with the Western Brick & Supply Co., of Lincoln, which is a selling corporation handling all kinds of building materials.

Clay Miners and Manufacturers Meet

The New Jersey Clay Miners' and Manufacturers' Association held an interesting meeting at the East Jersey Club, on Wednesday evening, October 26. A regular business session was preceded by an enjoyable dinner. A representative number of members were present with president L. M. McHose presiding. A primary point of discussion covered matters pertaining to the laying of the cornerstone for the new ceramic research station and school at Rutgers College, New Brunswick, N. J. Work on this structure is well under way and the cornerstone will be laid with appropriate ceremonies at an early date.

Will Rebuild of Brick and Steel

The Duffney Brick Co., Mechanicsville, N. Y., has plans under way for the rebuilding of the portion of its plant recently destroyed by fire. The work will consist of a new two-story, brick and steel building. Bayard & Massey, 75½ North Main Street, Mechanicsville, are architects.

Will Open a Number of Properties

The Iotla (N. C.) Clay & Mica Co. has been organized with a capital of \$50,000, to mine clays in that district. A number of properties will be opened up. The company is headed by Herman A. Gudger, Asheville, N. C.; A. W. Mangum, Chapel Hill, N. C.; and Francis A. Gudger, 469 Fifth Avenue, New York.

Ohio Red Group to Meet

A meeting of the Ohio Red Group is scheduled at the Athletic Club of Columbus, November 9, with Chairman Hamilton, of the McArthur Brick Co., in charge. Conditions in the red group are to be discussed.

Sewer Pipe Plants Resume Work

In the Eastern Ohio district the works of the American Sewer Pipe Co., at Uhrichsville, have resumed and, it is stated, have prospects for a steady run. The Diamond plant of the same company, the first sewer pipe works established in that district, is also running.

Labor Strikes for Recognition of Union

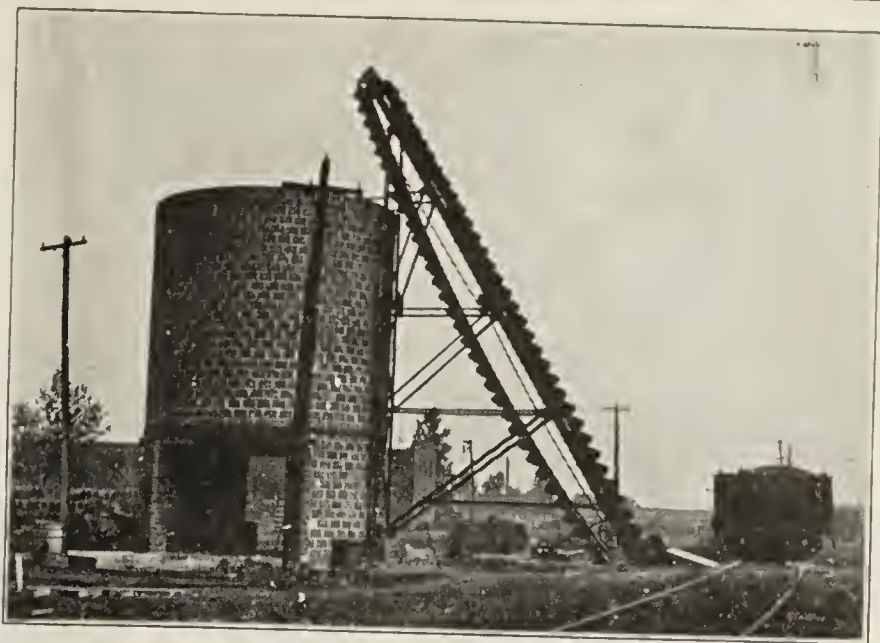
Paul B. Belden, head of the Belden Brick Co., of Canton, was a recent visitor in Columbus, Ohio. He reports that the plant at Canton is being operated after extensive repairs were made. The plants of the company at Ft. Washington and Uhrichsville, Ohio, are also in operation while the plant at Somerset is down because of labor troubles. The workers at the last named plant are striking for recognition of the Union.

To Begin Work November 1

The National Fire Brick plant of New Philadelphia, Ohio, idle since August 1, while repairs are being made and a new trestle being constructed, will resume in part November 1, employing 85 to 100 out of a normal payroll of 130. All other plants in the Dover-Strasburg district are running.

Labor Trouble Shuts Three Plants

On account of labor trouble three plants of the Hocking Valley Brick Co.—Nelsonville Brick Co. combination, of Co-



Simplicity-Speed-Economy

THE Sunbury Unloader requires only one man to operate. It reduces the time and cost of unloading coal to a minimum. It is speedy (55 tons in 50 minutes). Simply, yet durably constructed. Seldom needs repairs.

SUNBURY UNLOADERS will solve your problem of handling coal with less expense and more speed.

Tell us your requirements and let us send you complete information. It will not obligate you in any way.

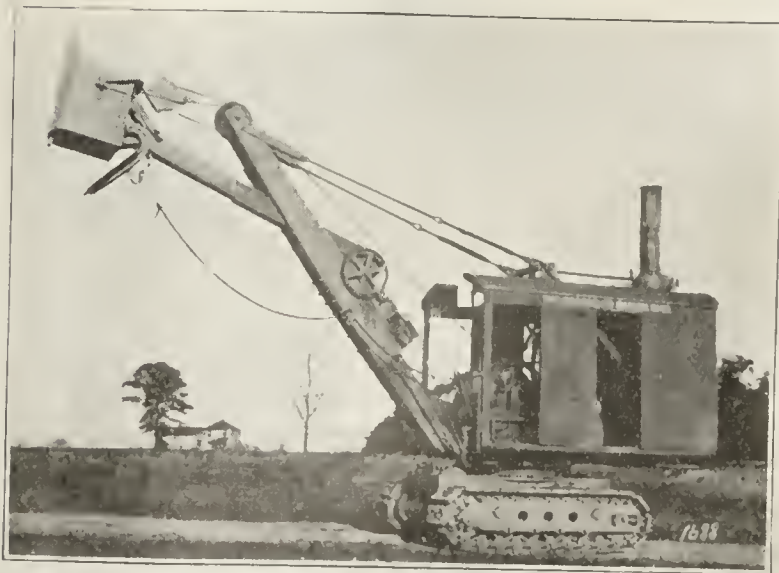
THE SUNBURY MANUFACTURING CO.
SUNBURY, OHIO

Try them all and
time will prove

**OSGOOD
BETTER**

Revolving and Railroad Type
Steam Shovels, ¾ to 6 cu. yds.

THE OSGOOD COMPANY
MARION, OHIO, U. S. A.



¾-Cu. Yd. Continuous Tread Revolving Type With Power Steering Mechanism

SPEED—with a Perfect Mix

Clay products manufacturers who appreciate the value of speedy digging and perfect mixing of their clay, will eventually decide upon the

EAGLE SHALE PLANER

AS THE LOGICAL MACHINE.

It is a machine built for long and hard service. It reduces labor—saves more time and gets a better mix, economically, than any other method of clay gathering.

We can solve your problems. Let us hear from you today? Your inquiry will not obligate you.

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Des Moines,

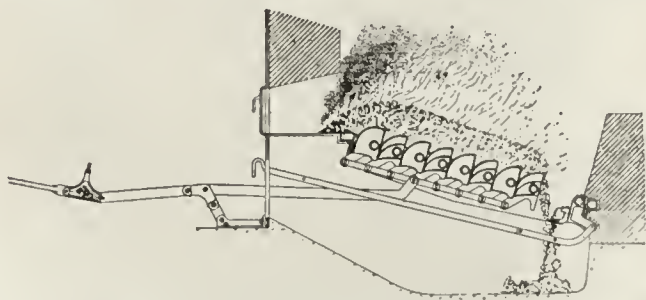
Iowa



ECONOMICAL FIRING

You are trying to keep your production costs down. Do you get the greatest possible efficiency from your boiler and kiln fireboxes? Are your firemen able to cope with your demands, or are they continually fighting fires at cleaning time? Put a stop to it!

COKAL HAND STOKERS



automatically insure better conditions for the firemen. They eliminate ash pit losses and the inrush of cold air which costs you from one hundred to two hundred pounds of coal at each cleaning. No more trouble with smoke inspectors—that is also eliminated.

Cut your costs—write us today. Our service department is always ready to serve you without obligation.

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lumbus, Ohio, are closed. They are the three plants at Nelsonville, known as two plants of the Nelsonville Brick Co. and the plant of the Ohio Fireproofing Co. Demand of recognition by the union is the principal cause of the shut-down. The other plant at Logan, Ohio, making paving brick is in operation.

Add Two to Bureau of Mines Staff

Two additions have been made to the staff of the United States Bureau of Mines ceramic station at the Ohio State University at Columbus. Dr. L. I. Shaw, who for six years previous to serving in the chemical warfare service in the war was connected with the department of chemistry of Northwestern University, Evanston, Ill., will be assistant superintendent of the bureau. He also served as assistant chief of the division of mineral technology of the bureau of mines, stationed at Washington. George A. Bole, has been appointed to do special research work.

Ohio to Let Road Contracts in Winter

Since so much criticism has been leveled on the Ohio Highway Department for the construction of brick and concrete roads figures showing low upkeep cost of this type of construction were compiled. E. C. Blossuer recently called attention to the fact that the federal aid bill, pending in Congress will bring \$3,750,000 to Ohio from the federal treasury upon its passage and approval by President Harding. Much of this money will be distributed at once and it is announced by the department that practically all 1922 jobs for road construction will be awarded during the winter months.

Markets Only Thru Dealer

Policy of the Superior Brick Co., Cleveland, Ohio, to sell its output only to independent dealers, and not to consumers, has been accepted by the dealers, and thru them the material is being marketed. Orders received, or inquiries made, direct to the Superior company are turned over to the dealers who close the business. Thru these channels plenty of new business is being booked, according to J. F. Aten, general manager, and production is better than normal for this time of year. The Superior is just rounding out its first year, a period that has been remarkably successful and beyond expectations of the members of the firm.

Plans for New Company Completed

Plans of the first unit of the Donahey Power & Products Co., which will be built just east of New Philadelphia, Ohio, were exhibited at the Chamber of Commerce rooms there this week. The plans are being worked out by J. Walter Moore, veteran Uhrichsville clay expert. Paul R. Murray of New Philadelphia has been retained as consulting engineer. The company expects to break ground in a few days and push to completion the first unit. In addition to the plans, samples of clay obtainable on the farms under lease by the company, also were exhibited. Charles G. Willis of Cleveland, who is financing the new concern, was at New Philadelphia recently conferring with the committee recently appointed by the Chamber of Commerce.

Work on New Plant Progressing

The Continental Clay Co., of Canton, Ohio, which also had a branch office in Columbus, is getting along fine on its plans for the erection of a \$500,000 sewer pipe plant in East Canton, four miles from Canton. The building committee which is the same as the executive committee of the company consists of J. A. Calhoun, of Canton, Warren B. Ferris, of Col-

umbus, and Frank H. Potter, of Chicago. Company engineers are preparing the plans which call for a 16-kiln plant with a capacity of 200 tons daily. A large amount of equipment which will consist of crushers, dry pans and plunger presses will be purchased during the winter months. It is expected to have the plans ready for figures in a month or six weeks. Plans will call for the completion of the plant by July 1 of next year. It will be one of the most modern sewer pipe factories in the Middle West. The Continental Clay Co. has plants at East Greenville, Salineville and Warmington, Ohio.

Look for Considerable Spring Business

With the opening of November little change is noted in the brick industry in the Canton-New Philadelphia, Ohio, district. Brick manufacturers are optimistic as to the future and anticipate brick demand for spring will exceed that of a year ago. Plants continue to operate on a normal basis, but none of the manufacturers are contemplating increasing production at this time.

"We anticipate much activity in the paving block business in the early spring," said an official of the Metropolitan Paving Brick Co. "Our plants are still operating, all six of them, four in the Canton district and two at Bessemer, Pa., and we expect that within the next week or ten days that all contracts will be cleaned up. Lettings are infrequent at this time, but there is a large volume of legislation under way locally and in nearby cities for proposed paving jobs. We believe that spring business will be in excess of that of this year and are making preparations to increase production at our many plants and will be in a position to handle an increased volume of business when the time comes."

Fire Damages Refractories Plant

Fire at the plant of the United States Refractories Co., Mt. Union, Pa., did considerable damage. The prompt response of the local fire department to a call saved the plant from possible serious injury.

Will Open Business in Pittsburgh

The Pittsburgh (Pa.) Shale Products Co., a Delaware corporation, has filed notice of its intention to transact business in Pittsburgh.

Organized to Operate Clay Mines

The Wilson Coal & Clay Co., Pittsburgh, Pa., has been incorporated under Delaware laws, with capital of \$100,000, to operate clay mines in the western part of the state. The incorporators are Lon and B. A. Wilson, and Frank M. Ellis. The company is represented by the Capital Trust Co., Dover, Del.

Expect Increase in Paving Brick Demand.

Despite the fact that paving brick sales in the Philadelphia district have been greatly handicapped by high freight rates, manufacturers report business better so far this year than in 1920. In anticipation of big business for 1922, one manufacturer is planning to make and store a large quantity of paving brick during the winter.

Beaver Valley Shipping Brick to France

Brick men of the Beaver Valley are optimistic as to the outlook for future business. According to Superintendent L. B. Rainey, of the Fallston Fire Clay Co., manufacturers of flashed iron spot brick, and B. E. Thompson, head of the Rochester Clay Products Co., an average business is expected to prevail

BEST GRADES NEW JERSEY REFRACTORY CLAYS

FOR
FIRE BRICK—Various grades to suit requirements.

SAGGERS—Clays that will stand wear and tear of pottery use.

SANITARY WARE—Top Sandy Clay.

FOUNDRY USE—Red Spotted Clay.

STOVE LINING—Red Spotted and Blue Sandy Clay.

FIRE MORTAR—Ground Fire Clay especially prepared.

Forty years successful experience in catering to above requirements.

The ANNESS & POTTER FIRE CLAY COMPANY

Main Office and Works: Woodbridge, N. J.
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CALDWELL Service



HALF a million dollars' worth of well-selected stock, constantly maintained and an organization keyed up to the theory that plant efficiency is measured by the number of orders shipped on the day of receipt, accounts for Caldwell service. Let us figure on your requirements.

H. W. CALDWELL & SON CO.

LINK-BELT COMPANY, OWNER

CHICAGO, 17th Street and Western Avenue

DALLAS, TEXAS, 709 Main Street

NEW YORK, 299 Broadway

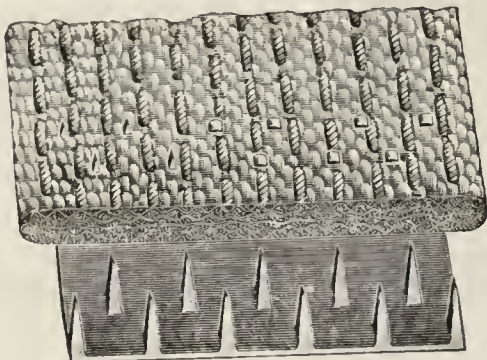


OVER \$10000 SAVED

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Talcott Clinching Belt Hooks

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Reduce
the
Breakage
of
Belts



They
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Last
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A Superior Fastener for All Kinds of Fabric Belting

Used for 30 YEARS in the leading Brick Works, Cement Works, etc., on HEAVY DRIVES and CONVEYOR BELTS.

SEND FOR FREE SAMPLES AND TRY THEM

W. O. & M. W. Talcott, Inc.

PROVIDENCE, R. I.

TALCOTT STANDS FOR QUALITY

during the winter months with a boom next spring. Both mention the building needs of the country, stating that every town and city in the United States is suffering from a shortage of homes and that with home building there will come a brisk demand for the finer grades of brick in the manufacture of which the Beaver Valley plants specialize.

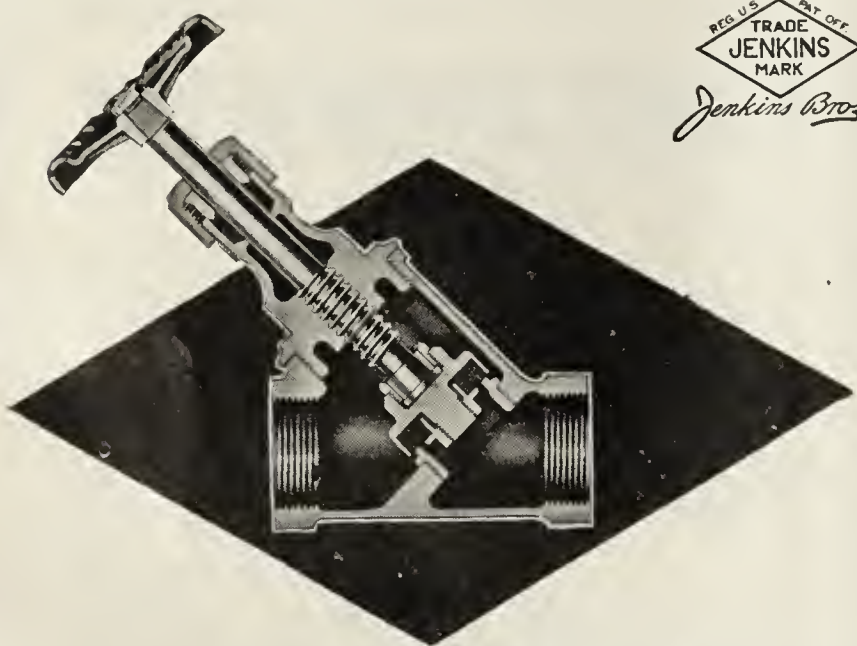
Brick from the Beaver Valley region is shipped to all parts of the United States and Canada. Some has been shipped to France but the manufacturers say that the French trade holds little appeal to them because of the ruinous freight rates to the coast and the competition supplied by the Belgians with their shale brick and low prices.

A. C. Warfel, who has recently returned from France, has been making an inspection of a number of the Beaver Valley brick industries with a view to awarding contracts for a number of American contractors and the French government.

Operates All Year at Capacity

Steady operation with a full force of men is the record of the Key-James Brick Co., Chattanooga, Tenn. for this year, which has been one of general depression. The production schedule has been maintained thruout the year, and not once was the company forced to fall below capacity. According to A. B. Adams, general manager of the company, "It is not a question of getting orders—it is a question of filling them on time."

Mr. Adams stated that Chattanooga and the Chattanooga district have swung into the line of heavy purchasers. A large percentage of the brick sold in the Chattanooga section, however, was used in construction projects in the suburbs. The company's "Burlap" texture face brick are in popular demand. A large number of commercial, public and educational buildings use this brick in their construction.



Standard Brass Y or Blow Off Valve



Fig.
124

Free opening nearly in line with pipe allows free flow of steam and offers little resistance to heavy fluids. Used as blow off valve and in sugar refineries, chemical and dye works—places that require a valve to handle heavy liquids. Suitable for 150 pounds working steam pressure, or 250 pounds working water pressure.

JENKINS BROS.

New York Boston Philadelphia Chicago
Montreal London Havana

FACTORIES: Bridgeport, Conn.;
Elizabeth, N. J.; Montreal, Canada.

Jenkins Valves
SINCE 1864

Provo Pressed Brick Builds New Kilns

Members of the Kiwanis Club of Provo, Utah, recently visited the plant of the Provo Pressed Brick Co. at the invitation of S. H. Belmont, manager, to inspect new building operations. Three new down-draft fire brick kilns of the latest type, with a capacity of 80,000, and a rectangular down-draft kiln with a capacity of 150,000 brick or the equivalent in hollow building blocks, are being erected at this plant. Work is also going forward on a new building for drying drain tile and sewer pipe. The Provo Pressed Brick Co. has sold approximately 2,000,000 brick this season, and the demand in that vicinity is greater than they can supply. An ample supply of shale and silica near at hand was explained by Mr. Belmont as one of the company's advantages over many brick plants. A 360 acre tract in Summit County, on which this company has a 50 year lease, supplies their clay, which is declared to compare favorably with the best found in Ohio.

New Building Material Made of Straw

A new building material developed at Alberta University, Edmonton, Alta., Canada, threatens to infringe on the markets heretofore covered by brick. The material is made from straw chopped fine and mixed with other ingredients, the nature of which have been kept secret. Tests made at the university seem to prove that this material possesses strength equal to the strongest building composition now in use. If the tests continue to be as successful as those already made, it is the opinion in some sections that Canada's building trade will be revolutionized. One of the most attractive features of the new material is its extreme cheapness. It is said that it can be sold for less than any other competitive building material on the market.

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories
and Detailed Announcements that Our Ad-
vertisers Believe Will Interest Our Readers

Marion New Gasoline-Electric Shovel

From an engineering viewpoint it has been decidedly interesting to watch the development of steam, gasoline and electric shovels.

With the completion of the Marion New Model 21 Gasoline-Electric we step into an era of advanced shovel construction, far ahead of anything that has ever been produced up to this time. Shovel manufacturers have been building electric and gasoline shovels, draglines and cranes for many years but the construction has always been confined to what is termed in engineering and sales language as "Single Motor" Equipment.

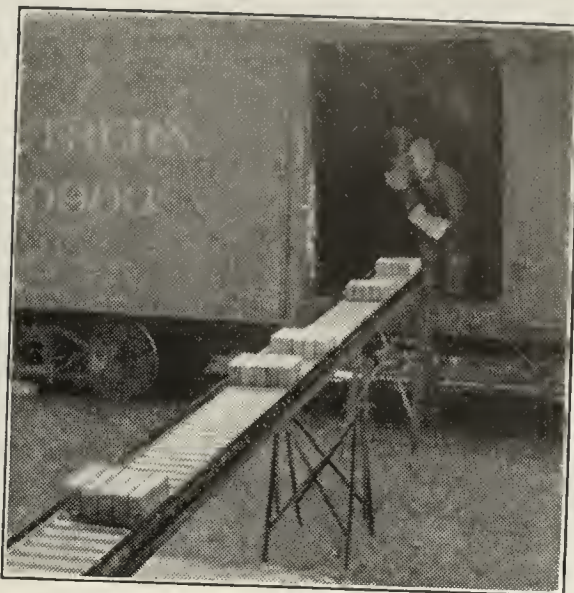
When the call came from certain industries and from a number of localities for a practical and efficient type of gasoline and electric The Marion (O.) Steam Shovel Co.—as pioneer and leader in every new development—answered the call with a new and distinct design. Experimental features were eliminated; frictions and brakes were dispensed with; controlling apparatus perfected and in every way electric and gasoline power as applied to small revolving shovels was mastered.

To those who are not familiar with this new machine, a brief description of its construction may prove interesting.

To begin with, when the Marion engineers first decided to bring out this new shovel it was agreed that no rotating, propelling or crowding frictions would be used and that each unit would be independent. This meant that the hoisting, rotating and crowding operations would each function through separate motors and the general principle of control and operation would be identical with the steam machine. This was a radical departure from anything heretofore considered for small revolving shovels, but it was the basic idea upon which this new type was founded.

By following this idea of construction many parts ordinarily used on the standard steam machines, are retained on the electric and gasoline outfits—in fact, with the exception of the power units, the various parts of any model are interchangeable irrespective of the power used.

On the gasoline-electric shovel a direct connected generating set is installed at the rear of the upper frame, located in approximately the same place as the boiler on the steam machine. This generating set consists of a four cylinder, vertical, heavy duty gasoline engine fitted with Bosch magneto, Stromberg carburetor and bronze water pump and with the engine shaft extended for connection to the direct current generator. The engine has an S. A. E. rating of 53 h. p. On the all-electric machine this gasoline engine is replaced with an electric motor, otherwise the construction of the ma-



Distance Is Eliminated

Where STANDARD CONVEYORS are used there is no such thing as distance.

The slow and costly methods of manual handling are abolished. Common labor costs are cut to the minimum and skilled laborers are kept busy. There is no more delay waiting for materials.

And remember this is all done by GRAVITY—the universal FREE power. Decide today to take advantage of it.

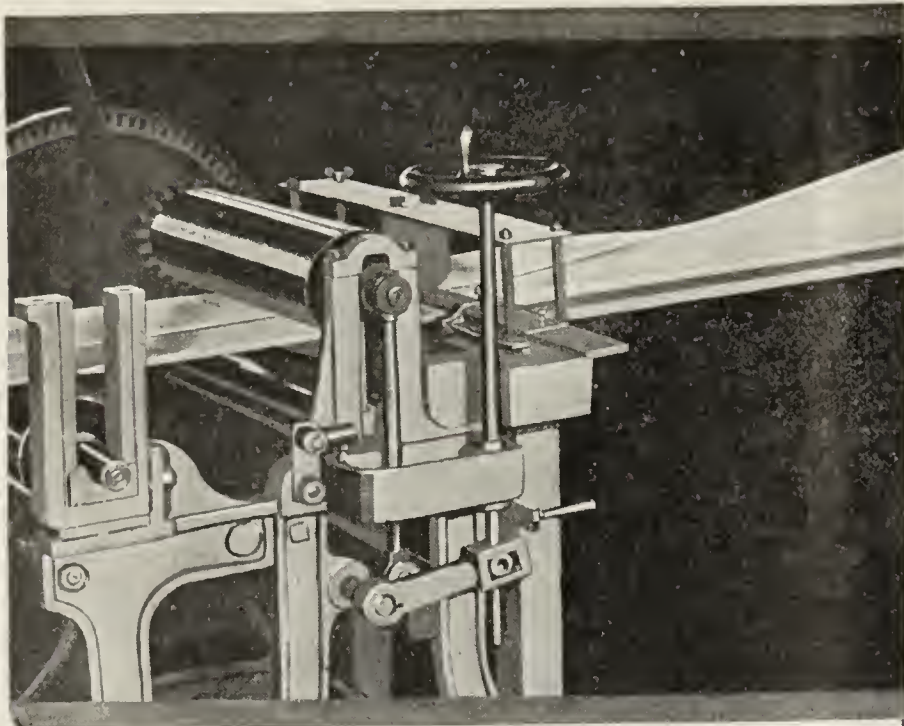
Write for complete information.

STANDARD CONVEYOR CO.

NORTH SAINT PAUL
MINNESOTA



Marion New Gasoline-Electric Shovel.



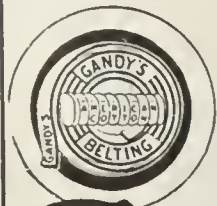
When You Buy a Belt — Buy a Gandy Belt

FOLDING the yards and yards of duck that is to become a Gandy Belt, is an operation requiring careful adjustment to insure accuracy, exact lapping of the plies and to avoid the danger of hollow edges. It is the conscientious care and the thorough workmanship which are put into this, as well as every other step in the manufacture of a Gandy Belt, that makes it stand up best in day-in and day-out hard usage.

Since 1880, Gandy (the original stitched cotton duck belt) has been manufactured to give real service. Since 1880 Gandy Belts have been giving real service for both driving and conveying—in brick plants and allied industries, covered or exposed to the elements.

There is only one Gandy. Be sure it has the green edge, the Gandy name and the Gandy trade mark. Then you get a dependable belt.

THE GANDY BELTING CO.



MAIN OFFICE AND FACTORY
732 W. PRATT ST. - BALTIMORE, MD.

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GANDY

STITCHED COTTON DUCK

BELT

chines are identical. With either type the generating set is mounted on a heavy cast iron base.

The "juice" is generated in the special 25 K. W. direct-current generator. From this generator feed lines lead to the controllers which are located at the front of the shovel and which have movements identical with the levers on the steam machines. Three controllers are used, one each for the hoisting, rotating and crowding, and from each of these controllers lines lead to their respective motors.

These new machines are just as flexible as steam and they will handle just as hard material at the same speed as any steam machines we have ever produced.

The motors are of the totally enclosed type. Each motor is mounted on a rigid base and is so located that it will not interfere with the use of the standard drums, bearings and shafts. This new design is even carried to such a degree that the motors and generating set can be dispensed with and the machine converted into a standard steam outfit, in case such a change should ever be desired.

At the front of the upper frame, on the side opposite to the levers, is located the motor driven direct connected air compressor which furnishes air for the hoisting ram and self-locking crowding brake. This compressor is automatic, requiring no attention except occasional lubrication.

When the first shovel was completed some time ago it was immediately put to work in a "more than ordinary" test. It was made to do some things that are not usually expected of a steam machine. The results were truly remarkable. It worked with all the vigor of a steam shovel and made scarcely any noise whatever—just a slight purr-r-r, getting somewhat louder as the load was applied. There was no coal, dirt, water or smoke, and the fuel consumed was almost negligible compared with the cost of fireman, coal and water on a steam machine. It came up to our fullest expectations and proved beyond the slightest doubt that it will deliver in the "Marion" fashion.—Adapted from *Marion Excavator*.

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Name Selected in Lancaster Iron Works Brick Machine Contest

A fifty dollar prize recently offered by the Brick Machinery Department of the Lancaster Iron Works, Inc., has been awarded to George S. Davies, of Cleveland, Ohio. The name "Auto Brik" suggested by Mr. Davies (who is connected with the Dover Fire Brick Co.), in a distinctive style of lettering will be prominently used in all future advertising matters, featuring the automatic brick machine, which is now known throughout the brick industry as the "Arnold-Creager S. S. S. Special Automatic Brick Machine."

Officials of the company were greatly gratified at the interest shown and the number and quality of the names received from all parts of the country. An interesting after development of the name selection lies in the fact that since the contest judges have reached their decision, the name Auto Brik has been suggested by several men who were not aware that such a contest has ever been held.

James P. Martin, manager of the Lancaster Iron Works' Brick Machinery Department, informs us of the intention of the company to take an even more aggressive attitude in aiding advancement throughout the entire brick industry.

Constructive articles and booklets will be issued, from time to time, and plans are under way for a kind of cooperation which will bring to this time-proven building material an even greater prominence.

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The Bucyrus Co. announces the removal of its New York office to Suite 728, 30 Church Street, with E. G. Lewis in charge as eastern sales manager, effective December 1st. Mr. Lewis has for many years been connected with the sales organization of the Bucyrus Co. both in Chicago and in New York and has also had wide experience in railroad and general contracting work, both in this country and abroad.

M. J. Woodhull, who has had large experience in the manufacture and sale of railroad construction equipment with the Bucyrus Co. and elsewhere, is appointed central sales manager to succeed Mr. Lewis in charge of the Chicago office, 622 McCormick Building.

E. R. Weber is appointed northern sales manager, at Minneapolis, 1224 McKnight Building to succeed J. N. Gawthrop, who will become associated with Lewis in New York. Mr. Weber is well known to the contractors in the northwest, having been connected with the engineering, manufacturing and sales departments of the Bucyrus Co. for the last fifteen years.

BRICK and CLAY RECORD

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit sub-
scriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

For Meeting the Freight Rate Situation

DO YOU NOT THINK that one reason why many clay plants have not made money this year is due to their own lack of initiative and their inability to adjust themselves to new conditions?

Take, for instance, the freight situation.

Up to this year the increased rates did not affect all plants vitally because during the period of inflation the purse-strings of the public were not drawn so tightly. People were willing to pay the extra tax put on clay products by reason of high freight rates. Thus clay plants managed to get along despite the exorbitant tariffs.

During the past year, however, as every concern knows perfectly well, conditions have been altered and the public has demanded reduced prices. Many operators have had their markets narrowed, but instead of recognizing this situation they sat back in their chairs and yelled at the high freight rates. Here's where readjustment of sales methods was necessary, and initiative as well as aggressive means, desirable.

The Independent Brick Co. of Trenton, N. J., was one of those concerns that determined to meet the situation. They operate three brick plants within an average distance of eight miles from Trenton. A few years ago they shipped by rail to cities as far away as 100 miles, but the increased freight rates make this impossible now.

So—they have been hustling harder than ever before and are building up an intensive market in Trenton and vicinity. The net ton freight rate from each plant to Trenton—in pre-war days—was 25 cents. It is now \$1.26, plus three per cent. war tax. One thousand brick weigh two tons, so the freight per thousand brick is \$2.52, plus the war tax.

But—it also costs \$1.25 per thousand to unload this brick, so the total freight charge is about \$3.85 on a thousand brick.

Shipment was formerly made to Philadelphia, which was their chief market, but which market has now

been closed because of prohibitive freight rates. So they put salesmen out in autos to hustle up trade in and near Trenton. This is now their only market, and they are confident that their aggressive sales methods will keep all three plants running to capacity.

Their deliveries now are nearly all

I'll Attend Conventions Because:

I need first hand information as to what is going on in the clay industry and the convention is the place to get it.

I need this opportunity to get away from routine business and mingle with those who are doing the big, vital things.

I need a wider viewpoint, a bigger mental horizon to fit into the national scheme of things.

I need to exchange my ideas with those of others. It's the only way to find out whether mine are worth anything.

I need optimism—lots of it—and some real, old pre-war enthusiasm for the year that's ahead.

Therefore be it resolved, that this year's conventions of the various clay products associations are my conventions, and their business is my business, and I'm going to attend.

being made by motor truck at an average cost of \$2.50 per thousand brick. They formerly sold almost exclusively by carloads, but now they go after every sales order, large or small. In this way they have met the freight rate situation, while other plants are still waiting for something to happen that will bring them business.

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Paving Brick Varieties Simplified

BY MUTUAL CONSENT of manufacturers, users, engineers, government and others interested, 55 out of 66 varieties of paving brick manufactured by the various establishments in the United States have been eliminated. Details of the events which took place at the conference of the Department of

Commerce on simplification of variety and standards for vitrified paving brick are given on other pages of this issue.

The paving brick industry is to be congratulated upon its interest and action in standardizing or simplifying varieties and reducing waste. It is the beginning of a new era in the relation of the paving brick industry to the engineering profession. Moreover, it is the first instance of an industry taking up the program being instituted by the Department of Commerce for the standardization of manufactured articles and the elimination of waste. It is an excellent example for other industries to follow.

Germany is planning and carrying out a far reaching program of standardization which it considers a necessary step in building up an unprecedented industrial structure upon which must rest in a large measure the future of industry in that country. Standardization is being carried on on a large scale and with intensive activity, and is of immense aid to the industries of that nation, which must use every expediency available for cutting costs.

Some of the industrial significances of the standardization are that it stabilizes production and employment, since it makes it safe for the manufacturer to accumulate stock during periods of slack orders, which he cannot safely do with an unstandardized product.

Standardization reduces selling price. This is often overlooked. The possibilities of reduced cost are generally even greater in distribution than in production. Standardization enables buyer and seller to speak the same language, and makes it possible to compel competitive sellers to do likewise.

By concentrating on fewer lines, it enables more thought and energy to be put into designs so that they will be more efficient and economical. By bringing out the need of new facts in order to determine what is best and to secure agreement on mooted questions, it acts as a powerful stimulant to research and development,—and it is thus in decided contrast to crystal-

1922 Will Reward Those Who

lization resulting from fixity of mental attitude.

By concentrating on essentials and the consequent suppression of confusing elements intended merely for sales effort, standardization helps to base competition squarely upon efficiency in production and distribution and upon intrinsic merits of the product.

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There Is Need for Protection

THOSE manufacturers whose business brings them in contact with the building situation in Chicago, and who, because of the inactivity in construction in that city were cheated out of a large amount of business this year, which ordinarily should have been theirs, would answer the question as to the cause for this by simply replying, "Labor unions."

It is not the labor unions as organizations of employed men that is objected to as it is the unfairness, undutifulness, inconstancy, and other undesirable features that have crept into the hearts of many of the members of labor unions. Very often the good workman is spoiled. The unworthy workman is shielded by the protection that the union gives him, and he is quick to take advantage of it.

It is not intended to write a brief condemning labor organizations. On

the contrary, we think it a good idea that workmen should organize and promote their interest. But like everything else that is not done in moderation, unionism has in many instances become objectionable. It is the intemperateness of many of our labor organizations today that is making them unpopular and feared by the public and employer.

When it is realized that unions do not pretend to carry out their contracts and repudiate them regardless of agreements, one cannot help but fear their purposes and dislike dealing with them. Labor dealers resist to their utmost, efforts to make labor unions legally responsible for their acts and contracts, the same as individuals, partnerships or corporations are made liable. For these reasons individual contracts with employes are more desirable than collective bargaining.

Individual contracts do not prevent labor from joining unions, yet they are strongly objected to by labor leaders. But when the clay products manufacturer notes that at least four plants in Ohio are now shut down because of strikes, he feels that protection is desirable if he has any dislike for worries. With the examples of unfairness prevalent both in production and as to the use of its ware, the clay products industry is becoming more

cautious in the matter of employing labor and protecting itself.

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Let There Be Light

WHEN YOU can have light, why will you fumble and stumble in the dark?

When you can have a guide, why will you go it alone?

When you can know, why will you guess?

Every time you guess you gamble.

Every time you gamble you worry.

Every time you worry you lose time, you lose efficiency.

Why not install a cost system so that you can secure facts, not guesses; get figures, not opinions? You have the guide and light of exact information so that you can proceed sanely, sure-footedly and with positiveness.

Why "buy orders" by cutting the price of brick when you are losing money on the deal? This practice is going on freely in some sections, because manufacturers do not know their costs.

Will you consider this? And if you do not have a cost system, install one. It will mean bigger profits; safer business for you. It will mean an easier, happier, better way of conducting your establishment.

Why not be a business man?

Whether or Not You

are a face brick manufacturer you will want to know what took place in the annual meeting of the American Face Brick Association, account of which will be in Next Issue.

How a common brick manufacturer in Canada cut his burning time and fuel cost in half is an article scheduled to appear in a near future issue.

An unusual clay winning scheme in use on a paving brick factory will be described in an early issue. It deals with the digging of the clay and its conveyance to the factory.

Points on setting and burning in up-draft kilns is the first of a series of articles by a well-qualified writer that will be published soon. This topic and its related subjects will appeal to most common brick manufacturers—especially those using the up-draft kiln.

The articles promise to be of tremendous value and highly interesting.

Have Reduced Their Costs!

Fine Program for N. P. B. M. A. Annual

National Paving Brick Manufacturers Association Picks Pittsburgh for Annual Convention, December 6 and 7—Announce Interesting Program for Two Day Session

IF PAST SUCCESSES can be taken as any indication, members of the National Paving Brick Manufacturers' Association will find it well worth their while to take off a few days from business at home and go to the annual convention which will be held in Pittsburgh, Pa., December 6 and 7.

The program has been announced and is of such a calibre as to insure two days filled with instructive and interesting discussions and talks. The subjects of the speakers are so arranged that various questions and angles of the paving brick industry will be discussed and brought before manufacturers by authorities. How civic interests and the paving brick industry can cooperate, in short benefits to be derived by both producer and consumer of paving brick thru closer consideration of mutual interests, will make up the program largely.

The engineering side of the industry will be treated by E. J. Mehren, editor of the *Engineering News-Record*, who will speak on the engineering profession. The *Engineering News-Record* has an enviable reputation in the engineering field and Mr. Mehren's part in bringing the paper to its high standing is well known.

E. W. McCullough to Speak

What promises to be an especially interesting paper will be presented by E. W. McCullough, manager the fabricated production department of the United States Chamber of Commerce. As business men well know the present administration looks very favorably on all legitimate association activities and the United States Chamber of Commerce is naturally in close touch with the trade associations and industries of the country. It will therefore be extremely interesting to hear Mr. McCullough review the contact of the chamber with the hundreds of associations and industries of the country.

Another man on the N. P. B. M. A. program is Prof. Arthur H. Blanchard, of the University of Michigan, who will reveal the viewpoint of the engineer and teacher of highway development. This is a very important subject, as it is to the colleges and universities that we must look for highway engineers, and it should be extremely interesting to get the viewpoint of the teacher and trainer of the future highway engineers of the country.

Bleininger Will Speak on Research

There has been considerable talk about the recently started movement for research in the clay products industry, and since this subject is one of the most important of the day and most vitally affecting every branch of the clay industry, delegates to the convention will be pleased to know that they will have an opportunity to hear just what research will mean to the paving brick industry and what relationship the research program has to paving brick. A. V. Bleininger, chairman of the technical committee of the joint research committee has been secured to speak on this subject. Mr. Bleininger's knowledge of ceramics and his activities in the clay industry are so well known to everyone that he needs no introduction.

Summing up the program for the two days' convention it

will be seen that the list of subjects is unusually free from topics of general interest, practically every talk scheduled being of direct interest to the manufacturer of paving brick. The secretary, Maurice B. Greenough, is to be commended for the splendid program which has been arranged and if the members see what is in store for them at Pittsburgh they will need no urging to pack up their grip and go.

To Decide 1922 Policy

The accomplishments of the association during the past year will be reviewed at the convention and the policy for the forthcoming year will be decided upon. The meeting will be expected to ratify the work done by the organization in cooperation with the United States Department of Commerce, regarding the standardization of varieties of paving brick. This work is an immense stride forward and reflects great credit on the association for its progressiveness in accomplishing it. A survey of the industry made by the association revealed the fact that there were in use and being manufactured 66 varieties of paving brick. After investigation and recommendation by engineers, engineering societies and other authorities 55 varieties were eliminated, leaving 11 which will now be considered standard.

The hotel William Penn has been secured as the meeting place for this convention, which assures excellent convention facilities. It will be remembered that the conventions of other clay products associations have been held at this hostelry in former years.

These are troublous times and the old saw "Two heads are better than one" was never truer than it is today. The convention will give you a chance to get other heads working on your particular problems and you will have an opportunity to learn how other manufacturers conduct their business. Pack your worries and your clothes in your little grip and buy a ticket to Pittsburgh.

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LIST OF CLASS PUBLICATIONS AVAILABLE

A book containing a list of business, class, professional and technical publications, with a brief, comprehensive description of the field they cover, has recently been published. This booklet will be found very handy as a reference for any magazines of the above-mentioned types, as all publications are comprehensively indexed. It is sent free to any one desiring a copy and it would be well worth-while to have a copy at hand for ready reference. The book may be secured by writing to "Crowley, the Magazine Man," Inc., P. O. Station T, New York City.

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DUTCH BRICK FACTORIES BUSY

In a recent report from Holland, it is set forth that the brick manufacturing industry there is in excellent condition and the year's production stands at a high point as compared with recent annual figures. The exceptionally dry summer weather has gone to enhance the output, and in company with a noticeably increased demand brick producers have made the most of the opportunity, enjoying a profitable business. Many yards heretofore averaging from 3,000,000 to 4,000,000 brick a year,

The C. B. M. A. Will Hold the Greatest Meeting of Its History at St. Louis in January

extended production to a point of from 10,000,000 to 12,000,000 brick in the 1921 season. It is said that Belgian and German competition has not affected the sales of Holland brick to any marked extent. The outlook for the coming year gives encouraging indications of a repetition of the activity evidenced in 1921.



CONTRACTORS TO MEET IN CLEVELAND

Acceptance of invitations by President Harding, Secretary of Commerce Hoover, Governor Davis and others to attend the convention of the Associated General Contractors, to be held at Cleveland, Ohio, beginning January 17, is expected by local building industry interests to be a factor in aiding the

solution of other problems, notably those for increasing the housing facilities of the community, as well as increase in commercial building, and greater employment to labor in the industry.



STATE GEOLOGISTS MEET IN SOUTH

The American Association of State Geologists on their final day at the recent Knoxville, Tenn., convention took a sight seeing drive at Johnson City, with officials of the Board of Commerce. They then visited Erwin, Tenn., and were shown thru the feldspar mill and pottery plant of the Clinchfield Products Co., the largest pottery south of the Ohio river and said to be the only one using all American mix for tableware.



Make the Dealer Part of Your Sales Force

Editor's Note—Excerpts from a talk by W. S. Ashby, advertising manager, Western Clock Co., La Salle, Ill., before the Chicago Association of Commerce. The Western Clock Co. advertises extensively in magazines with national circulation, and markets almost entirely thru the retailer. Mr. Ashby's remarks can be applied directly to distribution of clay products thru the dealer. The vital part of his message is—if you can get your dealer to speak for your product, it will sell.

WE ARE INTERESTED in the future of the retailer as an outlet for merchandise. If we do market goods successfully thru the retail dealer in the next five or ten years we have accomplished a big job. I objected to the manufacturers becoming more independent of the dealer as a sales outlet. They have been too independent of him.

It is usually the advertising manufacturers who complain of lack of support on the part of the retailer. There are two ways of selling advertised merchandise thru the retailer.

(1) Create a strong consumer demand so that the consumer goes into the retail store and insists on having that merchandise, which is an expensive method and not many advertising manufacturers have the bank roll to finance it.

Dealer Enthusiasm Very Necessary

(2) The other is the method that works best. Put the goods thru the retailer, create some consumer demand, but enthruse the retailer with the idea of pushing the merchandise. But the difficulty has been to enthruse that retailer. It is a fine thing to get the dealers to stock up with your advertised goods and to then send your customer or consumer in to the retailer to demand the merchandise. Window displays and such are fine to show where the merchandise can be had. But if the enthusiasm comes short your advertising efforts have not been of much avail. If you can enthruse that dealer so that his recommendation rings like a newly minted coin, then you can cut down on your window display because you have the dealer on your sales force.

By sending the consumer in to ask for that merchandise, you're putting him on your sales force. Occasionally a dealer wants to know what good the advertising is doing him. We had a dealer in a town of 600. He had dropped our line for some reason or other. Upon approaching him he stated that he hadn't had a request or demand for that article since he dropped it. We took up with him the question of an old form of advertising—word of mouth. The people in his town would never come in if they didn't know he carried the line. When a man had the goods in stock,

business was good. But as soon as he dropped the line, business dropped off.

Dealer Is a Secondary Sales Force

How many consider the dealer as a secondary sales force? How many have thought that the manufacturer of merchandise asks the retailer to put more confidence in his goods than he asks his own salesman? The average salesman works either on a salary, commission, or salary and commission. He goes out, and if working on a straight salary, has nothing to lose if he sells the goods or not, unless he loses the job. The man on commission usually has some arrangement whereby he is reasonably sure of his expense. He is paid for what he sells after he sells it. Consider the manufacturers' salesmen. He gets the best in the land. You get out special letters for him, fix bonuses, hold conventions and sub-conventions to enthruse him and get him to work. Those salesmen lack the faith of the retail dealer you are trying to put on your sales force, because you ask the retailer to back his faith in your merchandise with cold cash. If he sells it, he gets a profit. But he has got to sell it first. If not, he suffers the loss. He knows all the time that he does not collect his money until the last piece of merchandise is pushed across the counter. You don't ask your salesman to buy your merchandise or invest his money in it. You make every effort to teach him to sell it.

Advertising Not Most Important Factor

But do you do as much for your secondary salesman, the retailer? He takes up your proposition where your salesman leaves it. He holds the fate of your product in his hands. He can either save its life or lose it by the very inflection of his voice in presenting the article. What would happen if you could give the secondary sales force the same kind of training that you give the highly trained salesman?

Advertising is not everything, and it would be manifestly unjust to give advertising the full share of credit. Quality of the product is one big item and a square deal policy on the part of the management to the customers is the other big factor, and advertising I would put as the third factor. You must have a good product that stands up and in which you can make the dealer believe. Then we can sell the dealer on the idea that handling that kind of merchandise, is good policy for him.

Then add some selling instruction that will help him put it across, and you have a complete sales force. If we consider the retailer as necessary as our primary sales force and give him the same kind of assistance, there is no question of the potentiality of the market failing.

What Happened in Freight Rate Case

Associations' Attorneys Argue Case Before Interstate Commerce Commission—Attack Fallacies of I. C. C. Examiners' Report—Ask That Advance Made Under Ex Parte 74 Be Taken Off Entirely

By Francis B. James

Attorney for H. B. T. A., A. F. B. A., and N. P. B. M. A.

THE GENERAL BRICK CASE involving the rates on burned clay products instituted by the National Paving Brick Manufacturers' Association, American Face Brick Association and Hollow Building Tile Association was argued before the Interstate Commerce Commission on Thursday, November 10, and Saturday, November 12, no arguments being held on November 11 owing to the fact that that day was a legal holiday.

This case involves the whole question of the general level of brick rates throughout the United States east of the Rocky Mountains, the proper classification of articles that should be included in the brick list under common rates, and the whole rate structure, including grouping of points of origin, grouping of points of destination, and fixed differentials, competitive spreads and competitive parties between competing points of production.

Danville Taken as Base Rate to Chicago

The complainants' case was presented by Francis B. James and Michael F. Gallagher, the former taking up the question of the whole freight rate structure and the latter the question of the level of rates and proper classification.

The Examiner in his tentative report took Danville as a base rate to Chicago and related other rates thereto under the general adjustment of rates made in 1911. The Examiner in his report instead of reducing the Danville rate which was asked for by complainants increased the Danville rate 14 cents and thereby increased all rates related thereto by an equal amount. The brick interests vigorously assailed the report of the Examiner in taking Danville as a base rate, contending that Ottawa-Streator should be taken as a base or key and criticized the Examiner's report because instead of reducing the level of rates he increased the measure of brick rates in that territory.

The Examiner likewise fixed the Canton, Ohio, to Chicago rate as the key or base rate from Central Freight Association Territory and related it to the Danville rate and made the same \$1.10 higher than the Danville rate. This resulted in a reduction of the Canton key or base rate of 16 cents with a corresponding reduction to all points related thereto.

Base Rate from Pittsburgh to New York

This action of the Examiner was likewise assailed in argument, and it was pointed out that even if Canton were related to Danville the relationship should have been that of the 1911 adjustment which was 85 cents instead of \$1.10. The complainants contended that rates from Central Freight Association Territory to Trunk Line Territory should not be made on a percentage basis, but there should be a base rate from Pittsburgh to New York and that rates from points in Central Freight Association Territory should be related thereto. The Examiner accepted the contention of

the brick producers and he also found that the present level of rates from Pittsburgh to New York were too high by 65 cents. The brick producers contended that the reduction should have been more than 65 cents. It was pointed out, however, that the 65-cent reduction would take off the entire advance made under General Order 28 and a part of the advance under Ex Parte 74. The shippers likewise criticized the Examiner's report because he fixed the Canton group a differential of 75 cents over the Pittsburgh-New York base rate and contended that the differential eastbound should be the same as the differential westbound.

Did Not Fix Westbound Key Rate

It was also pointed out by counsel for the shippers that while the Examiner fixed an eastbound key rate, he wholly failed to fix a westbound key rate and directed attention to the fact that the Examiner's report was subject to criticism as much, if not more, for its omission as for its affirmative errors.

The subject of the discriminations as between Waterloo, Va., and the Clinchfield district, Pa., to common markets in New York Trunk Line and New England occupied a considerable part of the arguments presented. It was pointed out that to New York the distance from Clinchfield was 50 per cent. greater than the distance from Waterloo, Va., yet Waterloo was not given the advantage of its geographical location. It was particularly emphasized that altho the Examiner had taken off 65 cents from the already favorable rate from Clinchfield to New York he had made no reductions whatever in the rates from Waterloo to New York, thereby giving Clinchfield a decided advantage in rates altho it was at a great disadvantage as to distance. The illustration given in argument as to Waterloo was applied as to Winslow Junction and Perth Amboy.

Effect of High Rates on Small Builder

Members of the Commission by questions put to counsel injected the economic problem of the case as to the effect on the small man who would put up a \$5,000 house, both as to whether the rates retarded the building of such houses and whether the level of rates was reflected in the actual cost of construction. It was pointed out in argument to the Commission that not only was there a great restriction in building, but also an abnormally large increased cost of building. In this connection a member of the Commission asked a pointed question of Mr. James as to whether the price of building was not kept up by means of agreements made by members of the various associations. Mr. James answered this question emphatically in the negative and pointed out that these associations served a useful public purpose and that they did not fix prices and that the members of the associations were in sharpest competition.

Relation of Common to Other Brick

The Examiner's report classified common brick with all other forms of brick for rate-making purposes except as to hauls of 75 miles wherein he gave common brick a rate of 80 per cent. of the rates as to all other articles in the brick list. It was contended by the complainants that this finding was illogical and if common brick should be included in the brick list it should be included irrespective of distance. The representatives of the common brick manufacturers also pointed out that the finding of the Examiner was inconsistent and if common brick should take 80 per cent. of the rate for 75 miles, common brick should take 80 per cent. of the rate for greater mileages. Complainants by their counsel strongly pressed for a reduction of freight rates and pointed out the disastrous economic effect of the advances made under General Order 28 and the still further advances made under Ex Parte 74 and contended that the advances made under Ex Parte 74 should be taken off entirely. It was contended by one of the interveners that the advances made under General Order 28 should be taken off and also some or all of the advance under Ex Parte 74, which seemed to be supported by the report of the Examiner wherein he reduced the base rate from Pittsburgh-New York 65 cents. The advance under General Order 28 was a flat advance of 40 cents per ton and therefore the Examiner as to this rate took off all of the advance made under General Order 28 and likewise 25 cents of the advance made under Ex Parte 74.

Many Intervenors Present

The carriers were represented by James C. Carmolt and D. P. Connell. They argued that the report of the Examiner should be sustained as to increasing the Danville base rate 14 cents, but argued strenuously against the action of the Examiner in reducing the Canton rate 16 cents and in reducing the Pittsburgh-New York base rate 65 cents. The numerous interveners in the case were likewise represented by counsel and each of them presented arguments pertaining to each of their peculiar situations.

The Examiner declined to pass on any questions respecting the South and the Southwest except as to the uniform brick list and 60,000 pound minimum. Counsel for the Southern and Southwestern interveners argued in support of the Examiner's finding in refusing to change the rates and argued for a lower minimum and against a uniform classification.



THE COAL SITUATION

A few months ago the subject of stocking coal by the brick manufacturer for future use came up, and feeling among brick men at that time was that coal prices might not go lower, but that there was not much prospect of material advance in price. Some of the coal producers took the stand that coal would be scarce and much higher this fall, and endeavored to advise brick men to stock heavily.

The only time during the year that there were any sharp advances came in October, when in view of the threatened rail strike, there was heavy movement. In fact, a new record on number of cars shipped was established by the Louisville & Nashville R. R., for its entire system, this breaking all previous records by over 1,500 cars. Prices advanced sharply on prepared sizes, some grades jumping 50 cents to 75 cents a ton. The heavy movement has resulted in overstocked conditions this month, and a good deal of distress coal, where operators to escape demurrage costs, on consigned coal, have sold it for almost anything. Mild weather has also resulted in small demand from retailers and domestic consumers, while industrial demand has been generally slow, due largely to dullness in the steel industry.

During November the coal market suffered severe reaction, and today good grades of mine run coal from eastern Kentucky and West Virginia fields are quoted at from \$1.50 to \$2.15 a ton, while lump coal that was \$4 and \$4.25 a ton, is \$3 a ton. Many mines have closed down temporarily as a result of short business, and the fact that non-union mines have cut their wage scales, and are able to undersell. Much of the eastern Kentucky and West Virginia production is by non-union labor.

The brick man today in buying coal can write his own price on the order, as the operators need business badly. Really severe weather may result in higher prices, but the brick manufacturers are not busy in severe weather, and are not worried any about the future.

Prospects for spring prices of coal are encouraging for the brick man, as the coal miners' scale of wages expires in March, and the new wage scale promises to be lower than the present one.



BUILDING IN EAST SHOWS MUCH ACTIVITY

The eastern building industry, at the close of the 1921 season, is exhibiting the same aggressiveness that is usually found only in the spring. There is approximately double the amount of estimating now in progress that there was in February of this year, and building investors are proceeding to award contracts with great alacrity. The reasons for this activity, according to some of the firms who have recently secured contracts, are a growing belief that 1922 is going to be a crowded year for construction; that the extreme low point of material price reaction will be reached within six months, and that work started now will be available for the 1922 renting seasons.

The January 1 wage readjustment, which is already in process of negotiation, is being largely discounted by those who see a better financial outlook by having building projects under way than by waiting for possible benefit brought about by slightly lower construction costs thru wage cuts or material price reduction.

The building material market is nearer stability now than at any time since 1914. The following table shows the position of prices at present on brick and hollow tile as compared with quotations of January, 1920, and July, 1921:

	Jan., 1920	July, 1921	Nov., 1921
Brick, Hudson Common, M.....	\$23.00	\$14.50	\$14.50
Hollow Brick, M.....	20.00	25.00	25.00
Hollow Tile, Partition, M.....	160.00	179.40	151.60
Face Brick—			
Harvards, M	48.00	50.00	45.00
Enam. Am. size white, M.....	100.00	145.00	125.00
Kittanning rough buff, M.....	52.00	54.00	50.00



RAILROADS' OPERATING INCOME INCREASES

According to Engineering News-Record the net operating income of 197 Class 1 railroads amounted to \$82,707,607 for September, 1921, an increase of 11 per cent. reported for September, 1920. This report lacked four roads to be complete. Road revenues for the month were \$479,938,638, a decrease of 19.7 per cent. compared with the amount a year ago. Operating expenses for the 197 roads were 26.2 per cent. less this year than in September, 1920. Expenses this year stood at \$865,342,237. In August the roads reported net railway operating income of \$90,241,103.

The greatest single saving in expense was accomplished by the eastern district, which cut its operating cost 29.8 per cent.

Get Ready for the Common Brick Manufacturers Convention at St. Louis, January 30, 31 and February 1

Snappy Items on Subjects

NEW JERSEY MEN TO MEET DECEMBER 16

Arrangements are being made by the New Jersey Clay Workers' Association and Eastern Section of the American Ceramic Society for the annual meeting to be held at Rutgers College, New Brunswick, N. J., on Friday, December 16, with morning and afternoon sessions. The program committee composed of Professor George H. Brown, R. H. Minton, Fred A. Whitaker, Leslie Brown and A. D. Forst, Jr., is planning for a number of interesting papers, and it is hoped to secure about six or seven such technical discussions for the two sessions. A fine attendance is anticipated.

The Executive Committee of the organization held a meeting recently at New Brunswick, at which time the cornerstone was laid for the new ceramic research station and school. It is expected to have the building ready for official dedication in the late spring of the coming year.

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HARDING SIGNS HIGHWAY BILL

The long talked of Federal appropriation of \$75,000,000 has at last become an actuality with the signing of the highway bill by President Harding. Many states have been waiting with the launching of their road building programs until the availability of federal funds was assured. The bill demands primarily that a portion of the Government funds be set aside for upkeep, so that the original investment will not be allowed to deteriorate. A certain percentage of the appropriation will also be used in the construction of interstate highways.

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TRENTON SECURES RATE REDUCTION

M. D. Warren, traffic manager of the Trenton (N. J.) Chamber of Commerce, has succeeded in getting a 36 per cent. reduction in the freight rate on brick from Kinkora, Fieldsboro and Bordentown to Trenton. The present rate is \$1.26 per ton, and the new rate of 80 cents will become effective just as soon as the tariff sheets can be published. According to contractors, this announcement will tend to stimulate building in the vicinity of Trenton.

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OHIO DRAIN TILE MEN WANT 28.5% RATE CUT

About a dozen of the drain tile manufacturers and shippers of Ohio met at the Chittenden Hotel, November 15 to discuss freight matters and other things connected with the industry. The Ohio Drain Tile Association has the freight rate reduction question before the Ohio Utilities Commission, being represented by Beecher W. Waltermair. The brief of the complainants has been filed and an early decision is expected. The drain tile manufacturers and shippers are asking for a reduction of 28.5 per cent. which is the amount of the increase in August, 1920. The meeting adjourned to meet at the Secor Hotel, Toledo, as soon as the decision of the Ohio Utilities Commission is announced.

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REFRACTORIES SHOW INCREASED ACTIVITY

During the month of October refractories manufacturers noted an increase in activity and sales. It is problematical, however, whether November business will show improve-

ment over the previous month. The "Iron Trade Review" of November 17 states that consumers have been sending in a number of \$45,000 or \$50,000 orders to manufacturers, while inquiries for 30,000 or 40,000 brick are fairly frequent, occasional lots of 100,000 being ordered.

The disinclination on the part of the steel mills to do anything but the necessary repair work continues and there are no large orders for relining jobs in sight. Indications would seem to show that once a buying movement gets under way it will be large and sustained.

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PAVING BRICK MEN TO MEET IN NEW YORK

The date for the annual meeting of the Eastern Paving Brick Manufacturers' Association has been set as December 13 and 14, 1921. This year's meeting will take place in New York City and accommodations have been arranged for at the Pennsylvania Hotel, one of the city's newest and finest hostelries.

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SECTIONS OF A. C. S. TO MEET

The Central Ohio and Ohio State University sections of the American Ceramic Society have scheduled a joint conference on ceramic research at Lord Hall at the Ohio State University, Columbus, Ohio, soon. Dr. Leon I. Shaw will be in charge of the discussion. A dinner will be served at the Ohio Union at which Ross C. Purdy, organizing secretary of the society will be the principal speaker.

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HOLLOW TILE IS GOOD FIRE INSURANCE

The plan of the Judge O. Crary family, Iowa farmers for 75 years, has always been to build large, substantial farm structures, but Judge Crary never carried any fire insurance. He built his buildings apart, barns and stables quite a



How Will Crary Insured His Farm Buildings. Hollow Tile Chicken and Hog Houses Are Fireproof

distance from the house, and exercised the utmost care against fire. He was fortunate, he never had an accident. When his son Will built himself a new set of farm structures on one of the farms, he followed his father's practice of carrying no insurance against fire, but did not have his father's good fortune, and a disastrous fire swept away much of the farm. When he rebuilt the buildings he used hollow

of Current Interest

tile, and now carries no more insurance against fire than he ever did, but he considers he is insured just the same. The best plan, of course, would be to build of hollow tile and to carry insurance besides.

* * *

BIG BUSINESS MEN OPTIMISTIC

Further proof that American business is at last showing signs of returning health is contained in statements made in the Chicago Tribune recently by three of industry's biggest men. These men were E. H. Gary, chairman of the United States Steel Corporation; Horace Wilkinson, chairman of the Crucible Steel Co., and S. M. Vauclain, president of the Baldwin Locomotive Works.

Mr. Gary stated that the steel industry's volume of business has more than doubled in the last three months. Mr. Wilkinson, speaking to his stockholders stated that the Crucible Steel Co. is in the best condition in its history and never so rich as now. Mr. Vauclain said the Baldwin Locomotive Works is experiencing better business, that there are 40 per cent. of capacity on the order books and that the company will go into the new year with the same amount and that by next October business in his company will be within 75 per cent. of capacity.

* * *

GEORGIA CLAY PRODUCTION IN 1920

A report of interest is that recently announced by the Georgia Department of Commerce showing the aggregate money value of all products manufactured in Georgia in 1920. In this report the value of products manufactured by brick and tile plants amounted to \$8,520,596. Products of foundries and machine shops, including brick making machinery, aggregated \$33,480,955.56.

* * *

REPORT INCREASE IN EMPLOYMENT

The October survey just completed by the United States Employment Service shows a marked increase in employment in the basic industries, among which is included the clay industry. 44 out of the 65 principal industrial centers reported employment increases in October over September, and 20 reported decreases. Some of the common labor that is rapidly being released from agriculture, canneries and other seasonal activities is being absorbed by public improvements, according to indications in 231 cities.

The industries which show a decrease are paper and printing, vehicles for land transportation, and the miscellaneous group.

* * *

PITTSBURGH-ST. LOUIS WATER ROUTE

Brick manufacturers of the Ohio Valley are watching with interest an experiment in water transportation now being conducted by the Water Transport Co., which recently established a freight service between Pittsburgh, Pa., and St. Louis, Mo., on the river. One of the company's boats left Pittsburgh October 29 with a cargo of 8,000 tons, mostly steel products for St. Louis and intermediate points and was scheduled to return early this week with a cargo of iron ore and fire brick. While the time element operates to a slight disadvantage, as compared with the railroads, trans-

portation costs are materially reduced and it is expected that the prospect of river transportation as an established competitor will be a material factor in causing the railroads to reduce freight rates on products that can be successfully shipped by the water route.

* * *

KENTUCKY CLAY MEN TO MEET JANUARY 24

J. Crow Taylor, secretary of the Kentucky Clay Products' Association, reported that he is planning for the annual meeting of his association to be held on January 24, in Louisville, Ky., the hotel not having been selected. Mr. Taylor plans for the members meeting in the morning and leaving either in the afternoon or that night for Indianapolis to attend the annual meeting of the National Brick Manufacturers' Association.

* * *

ALMOST 2,000,000 SILOS NEEDED IN U. S.

One of the greatest needs on farms in the present day is more silos. According to figures compiled from data secured from the United States Department of Agriculture, there is a need for a minimum of 2,460,000 silos, to provide sufficient silage for the number of cattle which are actually existing in this country. At present there are only about 500,000 silos in the United States, so it can be seen that the potential need for this type of farm structure is very great. It has been estimated that a farm with ten head of cattle cannot afford to be without a silo. The following table shows the potential market for silos in the states listed, the differences between the two figures being the number actually needed.

	In Use	Required
Wisconsin	75,000	103,000
Illinois	35,000	84,000
Indiana	33,000	48,000
Ohio	30,000	92,400
Michigan	35,000	71,000
Iowa	23,000	91,500
Nebraska	7,500	82,200
Kansas	13,000	80,600
Oklahoma	5,000	62,000
Texas	700	45,520

* * *

A. C. S. MAKES DRIVE FOR MORE MEMBERS

In the drive for more members which the American Ceramic Society is now making a new "section" has been organized to be known as the "Boosters' Club." The only requirement for membership in this club is to bring in a new member. The names of all the members of the Boosters' Club will be published before the convention of the society in St. Louis next February. It is contended that no matter what kind of clay product a plant manufactures there is a division which covers the field. The seven divisions of the American Society are:

- The Art Division.
- The Enamel Division.
- The Glass Division.
- The Heavy Clay Products Division.
- The Refractories Division.
- The Terra Cotta Division.
- The Whitewares Division.

Pick 11 Paving Brick as Standard

Conference of Elimination of Excess Varieties of Paving Brick Discards 55 Varieties as Unnecessary—Appoint Committee to Consider Further Cuts in the Future

PROBABLY the most comprehensive move ever adopted by any trade association of this country, that must eventually result in closer cooperation and understanding between producer and consumer, has been accomplished in the conference of the United States Department of Commerce looking to the simplification of variety and standards of vitrified paving brick, and which has just been concluded at Washington.

The department conference resulted in the elimination of 55 varieties of paving brick, reducing the number to 11, and which will henceforth be recognized as the standard varieties.

The importance of this meeting, insofar as the welfare of the country, in the matter of highway construction, is concerned, is indicated by the representative gathering of engineering, manufacturing and governmental factors of the United States, who appeared upon invitation extended by Secretary of Commerce Herbert Hoover thru F. M. Feiker, assistant to the secretary.

Prominent Organizations Represented

Associations and organizations represented were: American Association of State Highway Officials; American Ceramic Society; American Electric Railway Engineering Association; American Engineering Council; American Engineering Standards Committee; American Institute of Architects; American Institute of Mining and Metallurgical Engineers; American Society of Civil Engineers; American Society for Municipal Improvements; American Society for Testing Materials; Columbus (Ohio) Engineers' Club; Federated American Engineering Societies; Indiana Engineering Society; U. S. Chamber of Commerce; Western Society of Engineers.

The various government departments represented were: Bureau of Standards; Department of Agriculture; Department of Commerce; Department of the Interior; Navy Department; War Department.

Many Engineers Present

The following engineers were present: Herbert M. McCullough, consulting architect, Dunn Wire-Cut Lug Brick Co.; Harry McCreary, road engineer of Florida; E. J. Mehren, editor, Engineering News-Record; Harry T. Shelley, chief engineer, Eastern Clay Products Association; Geo. W. Tillson, construction engineer, Dunn Wire-cut Lug Brick, Co.; James C. Travilla, construction engineer, Dunn Wire-cut Lug Brick Co..

Representing the paving brick industry were: N. P. B. M. A. Committee on Elimination of Excess Variety; C. C. Barr, Barr Clay Co., Streator, Ill.; S. M. Duty, Medal Paving Brick Co., Cleveland, Ohio; R. T. Hutchins, Mack Mfg. Co., Wheeling, W. Va.; O. W. Renkert, Metropolitan Paving Brick Co., Canton, Ohio; M. B. Greenough, secretary, National Paving Brick Manufacturers' Association, Cleveland, Ohio.

Reduced Varieties to 11

Others: G. O. Bowles, Mack Mfg. Co., Wheeling, W. Va.; Frank Dunn, Dunn Wire-cut Lug Brick Co., Conneaut, Ohio; J. W. Hall, Westport Paving Brick Co., Baltimore, Md.

Probably the most important feature of the conference is the reduction in the number of varieties of paving brick to 11, by mutual consent of engineers and manufacturers, which, experts confidently believe, can mean that there is hardly a paving project in which brick might be considered that cannot be satisfied by one of these standard varieties.

What is equally important, the conference has revealed that engineers and manufacturers can work together much more satisfactorily if individuals in each division will discuss with each other these matters of vital concern, while the meeting also has demonstrated that relations between producer and consumer can be harmonized thru the organizations of both engineers and manufacturers.

Hoover Authorized Conference

Opinion of those who attended the conference, authorized as it was by Secretary Hoover, and approved by federal departments and department heads, is that this is a method that seems to show the way to a solution of paving brick standardization—cooperation by users on the one hand, and relief for the manufacturer of misunderstanding and losses which may be suffered by him unless he can have standardization aided by the users.

It is admitted that time may be necessary to work out the program finally. Problems may arise that need careful investigation, but the conference leaves behind it an organization capable of conducting these organizations, and as manufacturers and engineers lend their support to standardized brick by specifying paving brick, so much faster will the time element be reduced. An agency has been created which has made notable advance toward stabilization already and which provides means for further refining standards, by mutual consent of producer and consumer.

Eleven Varieties Retained

The eleven varieties which have been retained as standard, after considerable thought and consideration are as follows:

Plain Wire-Cut Brick (Vertical Fibre Lugless)

3"x4"x8½"

3½"x4"x8"

Repressed Lug Brick

3½"x3½"x8½"

3½"x4"x8½"

Vertical Fibre Lug Brick

3"x4"x8½"

3½"x4"x8½"

Wire-cut Lug Brick (Dunn)

3½"x3"x8½"

3½"x3½"x8½"

3½"x4"x8½"

Hillside Lug Brick (Dunn)

3½"x4"x8½"

Hillside Lug Brick (Repressed)

3½"x4"x8½"

When the conference first opened there were under consideration 66 varieties embracing every kind of paving brick manufactured in the country according to the survey made by the National Paving Brick Manufacturers' Association.

The Common Brick Meeting at St. Louis in January is the Place to Get Ideas for 1922.

After due consideration by the conference these varieties were reduced to 21 and a committee was then appointed to cut down this number as much as possible, the result, upon approval by the conference, to be considered the number of standard varieties. This committee consisted of E. J. Mehren, chairman, F. B. Dinn, P. H. Bates, Leon C. Herrick and O. W. Renkert, and the result of its deliberations was the 11 varieties mentioned above.

Further Elimination Proposed

The committee reported that further reductions of varieties were desirable, but that this should follow after further study and after the idea of standardization in paving brick sizes has become well impressed on the paving field. It was thought that to go too far at the start would be likely to arouse such strenuous opposition as to defer for a protracted time the good results which were desired from the Washington conference.

In order to carry on the work so successfully started by the conference it was decided that a committee of ten be appointed, which will be composed of representatives of the following named organizations: American Society of Civil Engineers; American Association of State Highway Officials; American Society for Municipal Improvements; American Society for Testing Materials; Federated American Engineering Societies; National Paving Brick Manufacturers' Association; Chamber of Commerce of the United States; Bureau of Public Roads; Bureau of Standards and Department of Commerce.

Make Complete Survey of Industry

The principal duty of this committee will be to insure the carrying out of the standardizations embodied in the resolutions of the conference; to maintain constant contact between the various organizations and the Department of Commerce and to effect further eliminations in the remaining varieties.

Prior to the Washington meeting the National Paving

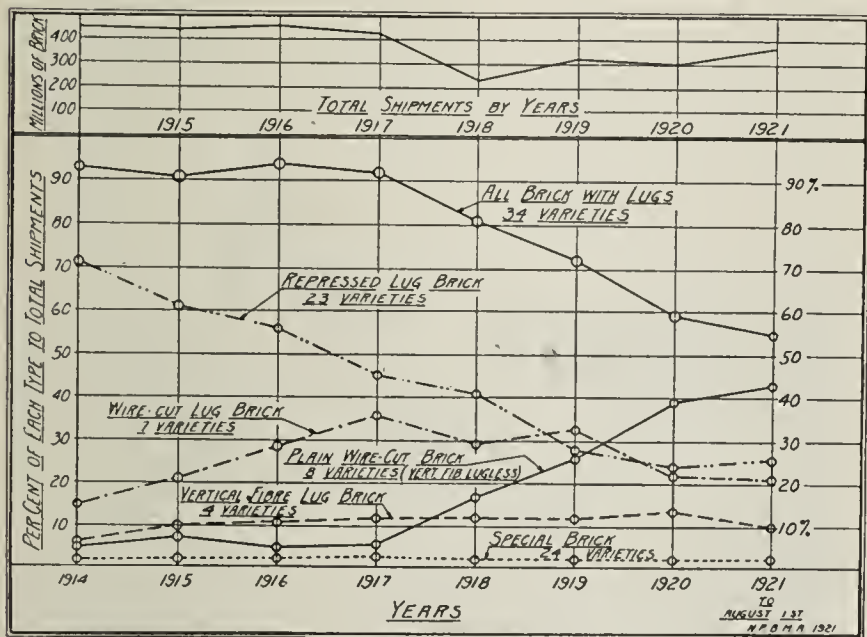


Chart Showing Per Cent. of Shipments of Each Type of Paving Brick to Total Shipments.

Brick Manufacturers' Association made a complete survey of the industry embracing among other information, the amount of brick of each separate variety shipped during every year since 1914. A recapitulation of this report brings out the fact that two sizes stand out predominantly. They are:

4"x3½"x8½"
3"x4"x8½"

There are ten varieties included in the above two sizes.

Secretary Hoover Speaks to Conference

Reviewing the table shown in another part of this article it will be noticed that beginning in 1918 a sharp upward trend of the joint percentages of the two sizes mentioned takes place, reflecting a tendency toward simplification of variety following the war-time depression of the industry.

At the opening session of the conference Secretary of Commerce Herbert Hoover addressed those present and in a very significant statement touched the weak spot of American industry. He said:

"There is one thing that stands out about American industry that comes up daily to the department, and that is the remarkable efficiency of the individual industry and the very considerable inefficiency of collective industry."

This table shows the proportion of the two popular sizes of paving brick to all the brick shipped in each year since 1914.

Variety.	1914	1915	1916	1917	1918	1919	1920	1921
4x3½x8½ inches.....	53.3	53.8	51.6	55.4	48.6	48.3	34.0	42.8
3x4 x8½ inches.....	6.0	9.7	9.1	8.7	15.1	27.0	45.6	40.3
Total	59.3	63.5	60.7	64.1	63.7	75.3	79.6	83.1
56 other varieties...	40.7	36.5	39.3	35.9	36.3	24.7	20.4	16.9

Mr. Hoover also clearly expressed the attitude of the Department of Commerce toward American business when he stated in regard to the paving brick conference: "We felt that we could perform a service to manufacturers if we acted as a center point around which their own cooperative action could take place"

TELLS OF CHICAGO BUILDING SCANDAL

How big business in Chicago has taken the bull by the horns, and is seeking to compel the building industry to play square in the Windy City, was explained to 400 members of the Cleveland (Ohio) Builders' Exchange at its annual meeting in Hotel Hollenden, Cleveland, this week. State Senator John A. Dailey, of Illinois, chairman of the Illinois Building Investigation Commission, told how Chicago is being freed from the toils of dishonest contractors, corrupt business men and unscrupulous material interests.

Mr. Dailey reviewed the work of his commission from its beginning, March 23, to the present time. The commission will continue active until December 15, 1922, when it will make its final report.

Thru federal grand juries indictments have been obtained against contractors, corporations, union officials and others to the number of 136, Mr. Dailey told the members. 91 defendants have been indicted in state courts, he said. The offenses are largely restrictive combinations.

Among the most vicious of these measures, in the opinion of Mr. Dailey, has been the methods of financing, including the handling of first and second mortgages. Excessively high rates of interest and handling charges have been the rule, rather than the exception, and a still greater evil has been the work of some brokers to encourage borrowers to place a fictitious value on the property.

Arch C. Klumph, prominent Cleveland materials dealer and former local and international president of the Rotary Clubs, reviewed briefly his recent trip to Europe, during which he visited London, Liverpool, Edinburgh, Paris, Berlin, Coblenz, Chateau-Thierry, the Marne and the Argonne.

REBUILDING BURNT PLANT

The work of rebuilding the plant of the Donnelly Brick Co. at Kensington, Conn., which was destroyed by fire on October 16, is progressing rapidly. The plant is expected to resume operation within a short time.

Drag-Line Gathers Tough Clay

Application of the Drag-Line Excavator to Winning Clay—Three Men Gather 400 Cubic Yards Daily

A CLAY DEPOSIT located in a hill about 110 feet high, and sloping down rather abruptly, containing three strata of clays, presented a difficult problem in the winning of the raw material for a clay plant near Cleveland. Of the three strata of clay in the deposit there is a blue stratum that is extremely tough and wet and a yellow stratum that is dry and soft. A great deal of study was given to the matter of find-



Arrangement for Dumping the Bucket into the Rail Car. The Car Is Then Hauled by Horse to the Switch and Then by Cable to the Mill

ing a suitable mode of efficient gathering, and apparently the solution was found.

A drag line excavator known as the Schofield-Burkett type was installed on this plant which is operated by the Cleveland (Ohio) Builders' Supply and Brick Co. and it has been found successful. The system of winning the clay is similar to other operations where a drag line excavator is employed, but its successful performance is somewhat remarkable in that the clay is exceedingly tough and as the operator remarked, "pulls like rubber."

Necessary to Blast Opening

It was necessary to blast an opening in the hill of clay and then shoot down both sides of the opening before operations could be commenced. The valley thus obtained measured approximately 800 feet from the base to the peak.

A dinkey engine was set up at the base of the hill, and between it and the hill a dumping platform was erected over a track that leads to the plant. The cars are pulled by cable from the switch just beyond the dumping platform, and each car holds about three buckets of clay. Only two cars are used from the platform to the plant.

A 1,600 foot cable was stretched from the engine to the top of the hill, and the cable was only a three-quarters inch iron rope, which snapped in two immediately—so great was the pull. It was replaced, however, with one measuring 1¾ inches and this size iron rope has proved strong enough for the operations.

No plowing or digging is necessary to loosen the clay and

only three men are employed on the job. The engine operator formerly was furnished with a fireman, but it was discovered that the operator had plenty of time to do his own firing, and the shoveler was laid off.

This arrangement is proving economical, since the three men in an eight hour day deliver on an average of 400 cubic yards of clay. The engine, a Strausburg, furnishes ample power and consumes only a ton and a half of coal per day.

Cable Only Wearing Part on Excavator

The excavator itself is practically indestructible, the only wearing part being the cable, and this is not really part of the machine. The dumping platform as originally planned was much too lightly constructed to bear the shock of the scraper. When the loaded scoop is pulled to the platform it is caused to slide over the waiting car on the track below. The scoop is prevented from falling by two steel arms projecting from the rear part of the scraper, which are held up by resting on supports.

The supporting apparatus was formerly iron pockets, but these were soon bent out of shape. Pockets have been replaced by the superintendent with 12x12 inch wooden beams protected with half-inch iron bands. Thus the projecting iron arms remain elevated on these beams, and the front end of the pan drops, permitting the load of clay to slide into the car located on the track below. No trouble has been experienced with this method of dumping.

The scraper has been in operation for several months and has given no trouble. It succeeds nicely in mixing the clay



The Bucket Nearing the End of Its Trip and Approaching the Dumping Platform

as it is hauled over the slide, and its operation is considered very satisfactory in view of the fact that the haul is 800 feet long, the clay like rubber, and getting harder as the



Proper Adjustment In Attaching Cable to Chains Prevents the Bucket from Capsizing



The Bucket Is Just to the Left of the Man Signalling. Further Over Is the Overhead Cable

weather becomes colder. The superintendent is confident that 'practically three times the present tonnage could be excavated if required.

* * *

INDIANAPOLIS PERMITS 8-INCH WALL

Changes in the city building code, designed to remove burdensome restrictions and add to the fire-proofing of lower class buildings were made by the city council in an ordinance passed recently. Another ordinance passed gives the city planning commission power to restrict the location of garages and filling stations in residence districts.

The changes in the building code have been explained in detail previously. One of the principal changes will permit the building of two story brick dwellings with eight inch instead of twelve inch walls. The old requirement of twelve inch walls made the building of brick dwellings so costly that few permits for this class of construction have been issued in recent years. The city planning ordinance requires the city building commissioner to refer requests for permits for garages and filling stations to the planning commission for approval before issuing a permit. It also classifies as nuisances such new buildings erected within 500 feet of dwellings.

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OFFERS PRIZES FOR ENGINEERING PAPERS

In accordance with a plan started in 1920 the Illinois Society of Engineers has offered five prizes of \$25 for papers to be presented at the annual meeting at Decatur, Ill., January 24 to 26, 1922. There will be a prize for each of the following classes: (1) Drainage, (2) roads and pavements, (3) sewerage, (4) surveying, (5) miscellaneous civil and municipal engineering. This competition is limited to members of not more than five years' standing and to candidates for election at the annual meeting. Papers are to be submitted by January 1 and must be prepared in accordance with the rules and conditions. Full particulars may be obtained from E. E. R. Tratman, C. E., secretary Illinois Society of Engineers, Wheaton, Ill.

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This year's convention of the National Paving Brick Manufacturers Association is highly important. Are you going?

HOW WAGES HAVE BEEN REDUCED IN 1921

Wages in the various industries in the country have been reduced during the year, in some cases considerably and in others but little. Wages in the cotton industry have dropped 25.7 per cent., whereas railroad employes have suffered a cut of but 12.5 per cent. The following figures, compiled by the J. L. Jacobs Co., Chicago, show the percentage of reduction in wages in various industries during the period from January 1 to October 1, 1921:

	Number Establish- ments or Groups	Estimated Number Employees Affected	Average Wage Reduc- tion Per Cent.
Cotton manufacturing	23*	213,000	25.7
Hosiery and underwear.....	8	7,000	24.3
Leather manufacturing	7	14,500	23.6
Woolen manufacturing	26	100,200	20.0
Car building and repairing.....	12	15,600	19.6
Iron and steel manufacturing.....	99*	412,800	19.2
Mining	24	128,500	19.0
Packing industry	1*	200,000	19.0
Boot and shoe manufacturing.....	30	49,000	18.8
Building materials manufacturing....	16	6,800	18.3
Electrical manufacturing	6	75,500	18.2
Rubber goods manufacturing.....	13	12,500	17.9
Silk manufacturing	22	30,500	17.5
Building trades (cities).....	176*	477,500	17.3
Public employment	54	108,000	16.8
Men's clothing manufacturing.....	7*	100,000	16.7
Paper manufacturing	22	24,000	16.6
Public utilities	152	137,000	15.0
Shipbuilding	20	109,500	14.8
Express employes (railroad).....	1*	50,000	12.5
Railroad employes	1*	1,829,000	12.5
Miscellaneous	232	847,000	17.0
Totals and average.....	952	4,947,700	16.0%

*Entire group or industry included.

Charging Obsolescence Into Cost

Obsolescence Important Item in Figuring Income
Tax—Should Not Be Confused with Depreciation
—How to Take Care of Obsolescence in Cost

By D. M. Worthington

Crescent Refractories Co., Curwensville, Pa.

OBSOLESCENCE may be brought about in various ways. The assets—whether machinery, equipment or buildings—may become obsolete thru the progress of invention; or the value of the asset may disappear thru the ownership being vested in other hands after a certain period of time; or the work for which a special type of building or a particular kind of machinery is used may cease entirely, when the assets in question will be worth only their scrap value.

Up to the last few years obsolescence was pretty generally merged with depreciation and prior to 1918, Federal Income Tax laws contained no reference to obsolescence. The 1918 law, Section 214 provides that in computing net income there shall be allowed as deductions: "a reasonable allowance for the exhaustion or wear and tear of property used in the trade or business, including a reasonable allowance for obsolescence." Prior to 1918, the Treasury Department allowed realized obsolescence but as such, deductions could have been made whether or not obsolescence was specified. The reason for the specific mention of obsolescence in the 1918 law was to permit the accrual of obsolescence, so as to allow for such future obsolescence as may be expected from experience to result from the normal progress of the craft. The recent rulings are to the effect that ordinary obsolescence which is accruing but which cannot be definitely ascertained, should be included in the annual depreciation allowances rather than in a specific reserve for obsolescence.

What Depreciation and Obsolescence Mean

As used in the rulings, depreciation means the gradual reduction in the value of property due to physical deterioration, exhaustion, wear and tear thru use in trade or business. Obsolescence means the gradual reduction in the value of property due to the normal progress of the craft in which property is used; to changes in surrounding conditions, such as social or legal; or to the property becoming inadequate to the growing needs of the trade or business. Obsolescence, a gradual lessening of value must be distinguished from "loss of useful life" as explained by Article 143, Regulation 45, which is quoted as follows: "When thru some change in the business conditions, the usefulness in the business of some or all of the capital assets is suddenly terminated, so that the taxpayer discontinues the business or discards such assets permanently from use in the business, he may claim as a loss for the year in which he takes such action, the difference between the cost or the fair market value as of March 1, 1913, of any assets so discarded (less any depreciation allowances) and its salvage value remaining.

This exception to the rule requiring a sale or other disposition of property in order to establish a loss, requires proof of some unforeseen cause by reason of which the property must be prematurely discarded, as for example, where machinery or other property must be replaced by a new invention, or where an increase in the cost of, or other change in the manufacture of any product makes it necessary to abandon such manufacture, to which special machinery is exclusively devoted; or where new legislation directly or indirectly makes the continued profitable use of the property impossible. This exception does not extend to a case where the useful life of property terminates solely as a result of those gradual processes for which depreciation allowances are authorized. It does not apply to inventories or to other than capital assets. The exception applies to buildings only when they are permanently abandoned or permanently devoted to a radically different use and to machinery only when its use as such is permanently abandoned. Any loss to be deducted under this exception must be charged off on the books and fully explained in returns of income."

How Obsolescence Is Charged In Income Tax.

You will observe however, that the article does not provide how the loss shall be recorded on the books except that it provides that it must be charged off on the books. Whether the loss shall be charged into the current operations of that year or charged against the accumulated profits of previous years does not seem to concern the Department. It would be pertinent here to quote Treasury Office Decision 381, which reads: "No amount may be charged off in any year in anticipation of obsolescence of a building which may become obsolete five or ten years later. However, a certain amount of obsolescence may be claimed from the time that it becomes certain that at a definite future date the building will be obsolete. This obsolescence should be spread over the period from the time such obsolescence becomes certain until the building becomes obsolete and should be claimed in the return filed for these years. For instance the fair market value of a building March 1, 1913 was \$30,000, its depreciated value December 31, 1918 was represented by \$18,000 and its estimated salvage value will be \$5,000 in 1920. At that time (December 31, 1918) it was definitely determined and certain that in 1920 the building would have to be torn down and rebuilt, due to its inadequacy to meet the growing needs of the industry it housed. The difference between depreciated value December 31, 1918 (namely \$18,000) and its estimated salvage value of \$5,000 represents obsolescence. This amount of \$13,000 should be spread over the years covering the period 1919 and 1920 and deductions claimed accordingly on the return filed for those years. In cases where obsolescence is claimed it must be

Editor's Note—This paper was presented at a meeting of the Refractories Accountants' Institute, in New York, October 25 and 26, 1921.

Your Competitor Will Attend the C. B. M. A. Meeting at St. Louis. Can You Afford to Miss It?

supported by facts which will enable this office to determine whether such claim is proper and allowable."

Handling Obsolescence On Company Books

The problem then confronting us is, shall this capital loss or this loss as yet unprovided for thru the annual charge for depreciations, be charged against the accumulated profits of previous years or be charged into operations as a cost of the current or following periods. The product of all industries has its realization determined by competition or by supply and demand. We may therefore assume that no more could have been received for the product regardless of cost, in other words the return from sales could not have been greater if this obsolescence had been included in the cost of product sold. Therefore it is obvious that the assumed margin between cost and selling price was more than it actually was and the profits for the previous periods were correspondingly overstated. The business may feel that this loss should be held in suspense and charged over future years, but this raises the question whether or not future customers should be charged for undercharges to past customers, also whether the cost of an asset should be absorbed by the product turned out during its life and not by product produced after the asset has been discarded.

It seems reasonable to absorb this unforeseen loss from obsolescence thru the accumulated profits of past periods, and it is interesting here to note actual practice regarding this type of loss:

How Railroads Figure Obsolescence

In the Interstate Commerce Commission's Classification on Operating Revenue and Operating Expenses of Steam Roads, effective July 1st, 1914, under operating expense accounts, special instructions, we find in paragraph five that it is provided that the ledger value (less salvage and the credit balance in the depreciation account with respect to property retired) of fixed improvements retired and replaced with property of like purpose, together with the cost of removing the property retired, shall be included in the accounts appropriate for the repairs of the property before retirement. This means that the unforeseen and unprovided for loss shall be included in the expenses of operation for the year. It does not seem right, however, thus to burden the current year with the mis-estimated depreciation of former years.

The Ruling of the Treasury.

The Treasury ruling in regard to obsolescence of intangible property is to the effect that obsolescence is not ordinarily applicable in the case of intangibles but will be allowed in exceptional cases, as in the case of the discontinuance of a going business because of the exhaustion of its source of supply, where the cost of the good will, or its value as of March 1, 1913, if acquired prior to that date, can be definitely shown, and the period of its obsolescence determined with reasonable accuracy. To sustain a claim for deduction for obsolescence of good will, it must be shown that the good will will be of no value at the close of an approximately definite period, and that the taxpayer will be forced to discontinue the business and be unable to continue in any similar business. An allowance for obsolescence of good will will be made only in connection with such good will as is assignable, as distinguished from good will attaching to individuals owning or conducting a business, or to the premises at which it is or was conducted; and no allowance for obsolescence will be granted in any case where, in connection with the operation of the business, the good will will be valuable in another

business after the termination of the business in which the taxpayer is engaged. A corporation engaged in the business of sampling ores is entitled to a deduction for obsolescence not only of its plant and equipment, but for value of good will existing and having a definitely established value as of March 1, 1913, or acquired thereafter by capital outlay, if it can be shown that the plant and equipment will be useless and the good will of no value at the close of an approximately definite period by reason of exhaustion of the ores on which its business depends.

Obsolescence Deserves Serious Consideration

Obsolescence, when applied to the future, is very uncertain and much more difficult of estimation than depreciation. Where expected, it has frequently not materialized and in many cases it has occurred where not anticipated. Many companies who have figured depreciation on a life of 20 years have found their plant superseded by more modern machinery in less than ten years. Naturally the reserve which has been set up was entirely inadequate. In view of the rapid strides in all mechanical sciences, obsolescence will continue to be a serious factor in the ultimate cost of producing goods. Clearly a manufacturer cannot make a profit until he sells his product so as to earn a sufficient sum to not only provide for current repairs and operating expenses, but to replace any portion of his property that may come to the end of its useful life. Thousands of concerns have gone into bankruptcy because their cost accounts did not reflect the full cost of their product. And since obsolescence is so important a factor in present cost, I would recommend that wherever obsolescence can be estimated accurately enough to set aside a certain amount each year in a reserve, that it be included in cost the same as depreciation; if no reasonable estimate can be made, then when the unforeseen or undetermined loss occurs it should be charged against the accumulated profits of previous years.

Always Include Obsolescence in Costs

As a matter of accounting practice it might be preferable to take care of obsolescence thru your depreciation rate. In most cases this would be better than to carry a separate reserve, but in any case see that it is included in your costs whether possible of complete determination or not.

Governor Fort once made the statement at a session of the Federal Trade Commission that depreciation and obsolescence were not discovered until the era of heavy taxation; it is not stretching the point to express the belief that from the present era of high taxation will come a distinctly better understanding of the underlying physical necessities of accounting. It goes without saying that for many years countless industries have gone ahead on stereotyped accounting methods, with the result that there has been an unduly large percentage of derelict manufacturing operations. The dissipation of invested capital is not a myth. We have only to examine a ten-year or a twenty-year summary of the experience of concerns within our personal knowledge to become distinctly aware of the fact that a large percentage of these concerns have failed to grasp the fact that they suffered immense money losses thru depreciation and obsolescence, which losses were not reflected by their accounting.



BRICK SCORES OVER CONCRETE

R. L. McAlpine, city engineer of Kansas City, Kas., has approved the substitution of brick for concrete for the header which will separate the street car company's section of the Quindaro Boulevard pavement from the rest of the surface. The header will prevent the disintegration of the brick pavement by vibration.

What's Wrong with the Clay Industry

Statistical Information Regarding Production in Normal Times
Approximate Demand, Maximum Production, and So Forth Should
Be Available—"Stock Selling Schemes" Give Industry a Black Eye

By G. P. Anderson

President Brick & Supplies Corporation, Lansing, Mich.

THE OFT HEARD REMARK that no organization is stronger than its weakest link is especially applicable to the clay products industry. During the past two or three years when conditions have been abnormal and demand has far surpassed the ability of the clay products manufacturer to take care of it, with the natural result that prices were governed accordingly, it was an easy matter to interest manufacturers in association work.

This letter is not to be judged from a standpoint of criticising any of the men who had this work in charge, but is a constructive criticism for the betterment of the industry.

It is true that a good advertising or promotion campaign was carried on and that the association has done a great deal of good work in advocating and installing up-to-date cost systems, which have materially aided the manufacturer in operating his plant, and the demand has probably been increased to a certain extent.

Should Have Statistical Information

But what has been done towards making a survey of the demand for clay products during normal times? Does the manufacturer know the approximate demand for brick and other clay products prior to the war? Do they know the tonnage in clay products that it is possible to produce with present day plants in maximum production? It is possible, but not probable that they may have an approximate idea of these figures? But there is one thing they do know and that is if there is an over-production in any one particular line that the price has been affected regardless of costs.

The writer had this very forcefully presented to him by conversing with a clay products manufacturer. This man in particular was very efficient in his cost systems, and manufacturing, and was desirous of acquainting himself with conditions; he forwarded his quotation sheet to another manufacturer and was thanked for the favor, but advised that the company did not have an established price list "but was simply meeting competition."

Demand Regulates Price

The remedy for this condition in the industry, it would appear, would be the most natural goal to accomplish so that efficient manufacturing and good cost systems may work to their maximum good for the industry.

It is an accepted fact that demand regulates the price and that over-production causes markets below cost and failures. Would it not be fair then to assume that an association that would furnish a survey showing approximately the average demand, and at the same time would publish the possible production of existing plants would be giving the manufacturer actual figures on which to base his different periods of operation?

This feature working in conjunction with efficient working

conditions and improved cost systems, would place the manufacturer in a position to regulate his output in accordance with demand and eliminate any chances of over-production.

This industry as well as other industries owes the people of the United States a sincere effort to reduce costs to a minimum, so that the products may be marketed at normal prices. It, however, should guard carefully against any actions, which would have a tendency to force efficient manufacturers out of business, causing losses which must be indirectly absorbed by the public. It would, therefore, appear that the greatest good that can possibly come to the industry would be a general survey of the present capacities and in addition a survey report of sales covering different periods of normal years.

Some Plants Stock Selling Schemes

There is also another rather bad condition which has been and is facing the different industries of the country today. That is, the organization of companies by individuals who have no thought of profiting by the operation of the plants they intend to promote, but secure their profits from the sale of the stock in these companies which are over capitalized to such an extent as to make a fair return to the investor impossible. The clay products industry has had its experience with this scourge and it is known that yearly there are being promoted and erected any number of clay products plants of this character with the sanction of the different securities commissions in every state. What is the result? The erection of a plant without any idea of the amount of product already being manufactured and a list of disgusted investors who by their influence do not help the industry.

Would it not be a good idea to appoint a committee whose work it would be to acquaint the securities commission of every state in the union of the willingness of the association to assist them in securing reliable information on any valuations. This would have a tendency to eliminate the fake promoter and materially benefit the future for the clay products industry.

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NUMBER OF BUSINESS FAILURES INCREASE

Compilations made by Dun's Review show that during October 1,713 failures occurred in the commercial world of the United States. There were 16.8 per cent. more insolvencies than in September and the money lost or the indebtedness was 43 per cent. greater. The October record was the second highest this year and compared with October, 1920, this year shows an increase of more than 70 per cent. in the number of failures.

Refractory Linings for Cement Kilns

Valuable Information Showing Approximate Annual Requirements for Renewals—Average Daily Capacity of Cement Mills in U. S. is 477,700 Barrels

TOTAL REQUIREMENTS of the cement kilns of the United States for fire brick lining the kilns is estimated at about 30,581,271. This is on a basis of relining the entire kiln, or its equivalent once each year on an average. Brick in the hot zone are replaced many times, the number of replacements varying and being contingent on the care in firing the kiln and other factors.

Expressing the same thing in another way, the requirements of fire brick are about 0.3 brick per bbl. of cement produced, as the product was about 100,000,000 bbls., and the fire brick used was about 30,000,000.

Total production of fire brick in the United States is given as 1,131,000,000, of which the number used in the cement kilns comprise about 2.7 per cent. These figures are thought to be reasonably accurate, taking the industry as a whole.

In arriving at these figures the number of kilns was taken, the daily rated capacity as given by the companies was reproduced, and the number of square feet of space in the kilns was figured. No allowance was made for the ends of kilns, which would add considerably to the total. On this basis the average number of square feet of fire brick on the basis of daily capacity was figured, which ranged from 2.8 sq. ft. per bbl. of daily capacity to 12.2 sq. ft., or an average of 5.2 sq. ft. per bbl. of daily capacity, figured on the total capacity, as shown in the footing of the appended table. This constant figure was then applied to the remainder of the daily capacity of the mills.

Fire-brick for cement kilns are 4 by 9 inches and they are 9 inches deep, cut to conform to the radius of a kiln of certain

Editor's Note—Reprinted by permission from Cement, Mill and Quarry of September 5, 1921.

size. The number of standard fire-brick, 2¼ by 4 by 9 inches in the various shapes is given:

Outside diameter of kiln.	No. standard fire brick.
66	2.96
72	2.96
78	3.02
84	3.04
90	3.06
96	3.09
108	3.13
120	3.16
Total, all sizes	24.44
Average	3.05

Four shapes make 1 sq. ft. of kiln lining, which would give an average of 12.20 fire brick to the sq. ft., then multiply the number of sq. ft. of fire brick by 5.2, the constant figure, and by 12.20, the number of fire brick in 1 ft., gives the total number. This number, 11,387,480, added to the 19,193,791, given at the foot of the compilation makes the actual number, as stated, 30,581,271.

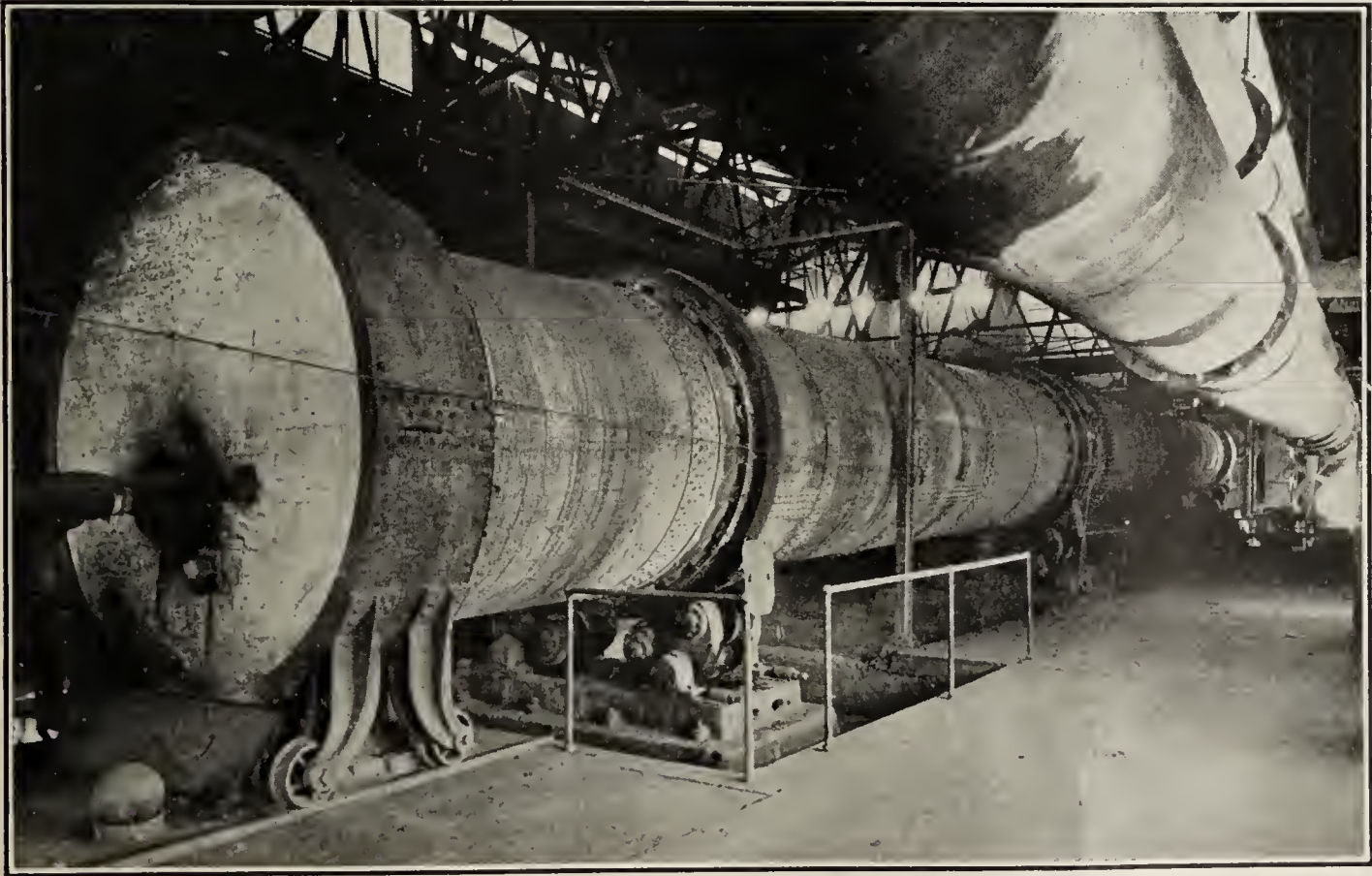
Average Daily Capacity

Average daily capacity of the cement mills of the United States, as given by the companies themselves, is 477,700 bbls. The average time of operation is this sum divided into 100,000,000 bbls., which is 209 days, the actual time of operation. This figure is doubtless inaccurate, as it is believed that the working time is nearer 250 days per year. Kiln capacity is perhaps overstated.

Perhaps a word should be said about "ratio of fire brick," which is given in sq. ft. This figure was reached by taking

the square feet in the kiln and dividing by the daily capacity. This was done for all the kilns, and the total of all was footed up and divided by the combined daily capacity of all the kilns. In figuring the kiln no allowance was made for tapering kilns, of which a few were reported, and doubtless of which there are many. This loss was more than made up by the brick in the ends of the kilns, which were not figured.

Relatively speaking, it would be an easy matter to add 25 to 35 per cent. to the working time, and bring it up to 261 days or 281 days, on which basis the average yearly output would be 125,000,000 to 135,000,000 bbls. Mills in the south work



View Showing Rotary Cement Kilns in Operation. Ends Are Bricked Shut.

Nationally Known Men Will Give Their Views on 1922 Business at the Common Brick Meeting

all the year round, and these mills show a material increase in operating time over the ordinary northern mill. Where the wet process is used, the mills are forced to close about December 15 and open about April 15 to May 15, depending somewhat on the weather and on the demand.

Some Plants Did Not Report

Figures are given showing the daily capacity of the kilns with the number of fire brick required to line the kilns once:

	Daily capacity.	No. fire brick.
Mills reporting kiln sizes.....	298,200	19,193,791
Mills not reporting kiln sizes.....	179,500	11,387,480
Total	477,700	30,581,271



Method of Intalling Refractory Lining in Rotary Cement Kiln.

The following companies do not give sufficient information to justify an endeavor to approximate kiln capacity, but the following facts regarding their output are reproduced:

	Daily capacity.		Daily capacity.
Aetna	2,000	Missouri	6,000
Alpha	30,000	Pacific	6,000
Ash Grove.....	3,000	Rcd Star	3,000
Atlas	53,000	Sandusky	8,000
Cresccnt	4,000	Southern States.....	1,500
Federal	4,000	Vulcanite	6,000
Fort Scott	1,500		
Giant	6,500		
Lehigh	45,000	Total	179,500

This figure, 179,500 daily capacity, multiplied by the constant 5.2, and by the number of brick in a sq. ft. of kiln space, 12.2, gives 11,387,481 fire-brick.

No. kilns	Size	Daily production	Quantity sq. ft.	Ratio fire-brick	Total fire-brick
Acme	4 8 by 180	2,500	18,131	7.3	223,399
Allentown	4 8 by 120	2,750	12,068	4.4	154,560
Alsen	7 7 by 120	3,000	17,880	6.0	217,520
Altoona	3 8 by 125	1,500	9,429	6.3	116,542
Bath	7 7.5 by 100	3,500	15,500	4.7	355,895
Beaver	1 10 by 200	1,000	6,286	6.3	29,167
Bessemer	5 10 by 175	3,000	16,500	5.5	208,560
Bonner	2 8 by 110	1,500	5,531	3.7	68,363
California	5 8 by 120		15,085		186,441
California	3 8.5 by 150	4,500	9,021	5.4	113,942

Cape Girardeau	2	9 by 130	1,800	7,354	4.1	92,082
Castalia	2	8 by 125		6,286		77,694
Castalia	5	6 by 120	2,500	11,314	7.0	134,863
Cayuga	5	7 by 96	2,000	10,560	5.3	128,409
Choctaw	2	8 by 125	2,000	6,286	3.1	77,682
Clinchfield	5	8 by 125	4,000	15,714	3.9	185,225
Colorado	1	9 by 120		3,394		42,493
Colorado	2	8 by 120		6,034		74,580
Colorado	2	7.5 by 120	3,000	5,658	5.0	69,254
Continental	6	8 by 110	2,500	16,594	6.6	205,110
Coplay	5	9 by 125		17,679		221,341
Coplay	8	6 by 60	5,500	8,731	4.8	95,074
Cowell	8	7.5 by 110	4,500	20,743	4.6	274,848
Cuban	2	9 by 175	1,800	9,900	5.5	113,938
Dewey	5	8 by 100	4,000	12,571	3.1	155,378
Dexter	6	7 by 100	2,600	13,200	5.0	160,512
Diamond	2	10 by 150	2,000	9,430	4.7	174,470
Dixie	10	8 by 110	4,500	27,657	6.2	341,841
Edison	10	7.5 by 150	7,500	35,357	4.7	432,767
Fredonia	2	7 by 160	1,500	7,040	4.7	85,606
Gilmore	2	8 by 125	1,500	6,285	4.2	77,683
Glen Falls	2	7.5 by 120		5,660		69,278
Glen Falls	2	7 by 120	2,000	5,280	5.4	64,215
Great Western	2	8 by 125	1,200	6,285	5.2	77,683
Gulf States.....	5	6.5 by 60	1,200	6,130	5.1	74,050
Golden States	1	8 by 125	600	3,143	5.2	38,842
Hanover	3	7 by 100	1,200	6,600	5.5	80,356
Hawkeye	6	8 by 125	3,800	18,855	5.0	533,049
Helderberg	2	10 by 170	2,000	10,685	5.3	333,349
Hercules	6	7.5 by 125	3,000	17,679	5.9	216,390
Huron	8	8 by 110	5,000	22,126	4.4	273,697
Indiana	2	10 by 240	3,000	15,085	5.0	190,874
International..	3	9 by 220	3,600	18,670	5.2	223,748
International..	2	9 by 220	2,400	12,446	5.4	155,832
International..	2	9 by 175	1,800	9,585	5.3	120,004
International..	2	8.5 by 160	1,800	8,540	4.7	104,652
Knickerbocker	4	10 by 175	4,000	22,000	5.5	278,080
Kosmos	4	7 by 80		7,040		85,606
Kosmos	2	8.5 by 125	3,000	6,490	4.5	70,736
La Tolteca	1	8 by 135		3,265		40,355
La Tolteca	1	10 by 150	1,700	4,714	4.7	59,385
Lawrence	10	8 by 110	4,800	27,657	5.8	341,741
Louisville	2	8 by 125		6,285		77,683
Louisville	2	10 by 150	4,000	9,428	3.9	118,770
Marquette	7	9 by 100	7,000	19,600	2.8	245,392
Michigan	3	8 by 125	1,800	9,428	5.2	126,340
Monarch	8	8 by 125	3,000	25,140	8.4	310,730
National	2	8 by 125		6,285		77,683
National	2	9 by 125	2,500	7,072	5.3	88,539
Nazareth	4	7 by 120		10,560		128,410
Nazareth	3	7.5 by 120	4,000	8,485	4.7	103,856
Nebraska	3	9.5 by 200	2,500	17,914	6.1	225,577
Newaygo	3	9 by 180	2,500	15,274	6.1	191,140
New Egyptian	9	6 by 60	1,500	10,183	6.8	121,381
Northwestern	12	7 by 110	6,000	27,830	4.6	336,414
Ogden	2	7.5 by 100		4,714		53,299
Ogden	1	7.5 by 125	1,000	2,630	7.3	29,461
Oklahoma	2	7.5 by 125		5,893		72,130
Oklahoma	2	9 by 125		7,071		88,528
Oklahoma	2	10 by 125	4,000	15,085	7.0	190,674
Old Mission....	4	8 by 150	2,000	15,085	7.5	186,450
Oregon	1	9-10 by 210	1,000	6,457	6.5	25,035
Peerless	9	6.5 by 80	1,800	14,710	8.2	177,797
Peninsular	3	9 by 205	2,500	16,396	6.6	205,278
Penn-Allen	6	7.5 by 80	2,500	11,314	4.5	138,483
Pennsylvania....	6	9 by 125	4,500	21,214	4.7	264,699
Petoskey	2	10 by 150	2,500	9,428	3.8	119,170
Phoenix	4	8 by 100	2,800	10,057	3.6	123,305
Portland	2	8 by 125	1,200	6,285	5.2	77,683
Pyramid	2	10 by 240	4,500	15,085	3.3	190,674
Riverside	10	8 by 100		25,142		310,756
Riverside	2	8 by 120	6,500	6,034	4.8	74,580
St. Mary's	3	8 by 160	2,800	12,069	4.3	149,442
San Antonio....	2	8 by 125	1,400	6,286	3.8	77,694
Santa Cruz.....	15	7.5 by 125	7,000	44,195	6.3	530,947
Security	3	8 by 125		9,429		116,542
Security	2	7 by 100	3,000	4,400	4.6	53,504
Southwestern..	2	8 by 150		7,543		93,231
Southwestern..	1	9 by 150	2,800	4,243	4.2	53,122
Southwestern..	1	9 by 200		5,657		70,736
Southwestern..	1	10 by 200	2,200	6,286	5.5	79,365
Standard	4	7.5 by 125		11,786		144,260
Standard	7	6 by 60	2,500	17,640	7.9	84,509
Superior	3	7.5 by 135		9,543		116,806
Superior	2	8.5 by 195	3,500	10,419	5.7	129,612
Texas	4	8 by 125	2,500	12,572	5.0	155,379
Texas	2	9 by 220	2,200	12,451	5.7	155,886
Three Forks..	3	9.5 by 150	2,250	12,436	5.5	154,804
Three Forks..	1	9 by 200	1,000	5,657	5.6	70,826
Tidewater	6	8.5 by 120	4,200	19,234	4.6	239,271
Trinity	5	8 by 125	3,000	15,714	5.2	185,225
Union	4	8 by 150	2,000	15,086	5.5	186,462
United States..	2	8 by 125		6,286		77,694
United States..	1	9 by 125	2,200	3,536	4.5	44,342
United States..	3	7.5 by 125	1,500	8,840	5.9	108,202
Universal	16	7 by 80	6,000	28,145	4.7	342,243
Universal	12	7.5 by 120	7,000	33,943	4.8	415,462
Universal	13	10 by 140	13,000	58,774	4.5	742,993
Universal	20	7.5 by 120	10,000	56,571	5.7	692,429
Universal	4	10 by 150	4,000	18,888	4.7	238,634
Wabash	3	8.5 by 125	2,500	9,735	3.9	106,104
Wellston	4	7.5 by 125	2,000	11,788	5.9	144,268
Western	4	9 by 175	4,000	19,190	5.3	240,008
Whitehall	5	8.5 by 120		16,028		199,393
Whitehall	1	10 by 120	6,000	3,771	3.3	47,675
Wolverine	3	8 by 182		13,728		169,678
Wolverine	7	6 by 120	2,500	15,840	12.2	188,813
Wyandotte	3	7 by 100	1,000	6,600	6.6	80,356
Total			298,200	1,541,546	5.2	19,193,791

NEW YORK BRICK PLANT WAGES DECREASE

A statement recently issued by the New York State Department of Labor shows that the wages of factory workers continued on the downward trend during September. The weekly average earnings of the factory workers employed in September was \$25.07, a decrease of 36 cents from the average earnings in August. A large decrease was apparent in the brick industry, due to the reduction in the number of employes thru closing of many brick plants for the winter.

* * *

STANDARD BRICK DOING MUCH ADVERTISING

Some of the convincing advertising copy turned out by the Standard Brick Co., Macon, Ga., is shown here. Besides bringing out the merits of this company's brick the adver-



This simple test, used by the U. S. Government, may be applied to all kinds of brick and building tile.

Absorption Test Proves Quality of Brick

Brick and Tile made of pure clay are highly resistant to moisture and fire, very tough and possess great tensile strength.

Pour water on a brick made of pure clay and practically none will be absorbed. Apply the same test to brick or tile made of inferior clay and the water will quickly soak in.

The clay in our pits is the purest, no sand whatever. Used exclusively in making—

Mercer and Cravenette, beautiful face brick, Ratine rough surface face brick, Duro hollow and Duro solid common brick, and Duro Tile. Write or wire for complete descriptions and money-saving prices.

STANDARD BRICK COMPANY
W. E. DUNWODY, Pres. Macon Ga.

A Type of Advertising Put Out by the Standard Brick Co., Macon, Ga. A Simple but Efficient Test of Brick Strength

tisement reproduced here is in a measure educational, as it shows a simple test used by the United States Government in determining the porosity of a brick. The Standard Brick Co. manufactures a great variety of face brick and ships to many points in the South.

There is a Big Surprise in Store for You at the Common Brick Convention in St. Louis.

BUILDS SCHOOL FOR EMPLOYEES' CHILDREN

Very often in our relentless pursuit of the elusive dollar and the worries and responsibilities of business we lose sight of the human element which enters into every phase of business. The steady droning of the machinery frequently drives from our mind all thought of the men that make the operating of this machinery possible. This is not always the case, however, and sometimes the manufacturers philanthropic instincts dominate his mercenary qualities.

Our attention was recently called to the praiseworthy effort the Cleveland (Ohio) Builders' Supply & Brick Co., is making to teach Americanism to the little sons and daughters of the workmen in the company's plant. Three years ago the company built a frame schoolhouse in the midst of the colony of employes which had settled in close proximity to the plant. This little building became inadequate for the needs of the colony and so the Cleveland Builders' Supply

CONVENTIONS IN PROSPECT

- November 30, December 1 and 2**—American Face Brick Association, Greenbrier Hotel, White Sulphur Springs, W. Va.
December 6 and 7—National Paving Brick Manufacturers' Association, William Penn Hotel, Pittsburgh, Pa.
December 13 and 14—Eastern Paving Brick Manufacturers Association, Pennsylvania Hotel, New York City.
January 24—Kentucky Clay Products Association, Louisville, Ky.
January 23, 24, 25, 26, 27 and 28—National Brick Manufacturers Association, Claypool Hotel, Indianapolis, Ind.
January 24, 25 and 26—Canadian National Clay Products Association, Toronto, Canada.
January 30, 31 and February 1—Common Brick Manufacturers Association, Hotel Statler, St. Louis, Mo.
February 27, 28, March 1 and 2—American Ceramic Society, St. Louis, Mo.

& Brick Co. built a new and modern two-room schoolhouse of brick, with all up-to-date equipment, to afford the children facilities which are equal to the large schools in the city itself.

Forty-two children attend the school and they are taught everything that is taught in the Cleveland schools by two competent instructors supplied by the Cleveland school board.

Acts of this kind go a long way toward eliminating all labor troubles as the workers are kept contented. During the present business depression, while some of the employes have been transferred to other work, the families have remained.

* * *

CUBAN INFORMATION MADE AVAILABLE

Because of the ever-changing conditions in Cuba, the Cuban Department of the American Protective & Credit Service Corp., commencing December 15, 1921, will publish a monthly bulletin on Cuba describing carefully and in detail the prevailing conditions on the island. The name of this bulletin will be "The Cuban Collector."

The information contained in the columns of "The Cuban Collector" will be taken from the daily cable reports of the adjusters employed on the Island of Cuba. This publication should prove very helpful and interesting to merchants having interests in Cuba, and will be mailed free of charge to any interested parties.

The Building Situation

BUILDING CONTRACTS are reaching a total of well over \$4,000,000 a week in the New England district, and while noticeably lower in gross amount as compared with the corresponding period of a year ago, show up very favorably when the lower construction costs, now prevailing, are considered.

At Boston, New York brick holds at \$18 a thousand, delivered, while New England production is priced at \$21. The New England Brick Co. is selling common sand-struck material, f. o. b. job in Greater Boston at \$17, and quotes selected water-struck brick at \$32.50, f. o. b. the job. Other leading dealers are maintaining figures close to these levels with good grade, water-struck, kiln run varieties at \$30. Good grade, rough texture stocks of face brick are priced at \$50 and \$52, while smooth material approximates closely these quotations. Colonials are selling at around \$43 to \$45. Fire brick shows no change; standard boiler No. 1 is priced at \$60, delivered, while higher grade refractory material is firm at a \$70 level. Fire clay continues at \$25 a ton in truck load lots for local deliveries.

Materials Decline at Providence

Burned clay and other building materials show a decided drop in the Providence, R. I., market. Common brick is selling from \$20 to \$24 a thousand, delivered as against the October quotation of 28 to \$30. Fire brick, No. 1 standard, nine inch is priced at \$70 to \$90, according to selection as compared with previous figures of \$80 to \$100.

Partition tile, 4x12 inches, is selling at \$160 a thousand as against a former level of \$220, and 8x12 inch material is \$270 instead of \$390. Flue lining, 8½x8½ inches is 36 cents a foot as compared with 45 cents, heretofore, while 8½x13 inch, and 13x18 inch stocks are at 54 cents and \$1.05 respectively, instead of 67½ cents and \$1.31. Sewer pipe, single strength, has declined from 30 per cent. to 40 per cent. off list.

Drain tile, 3 inch and 4 inch sizes, maintains at 12 cents and 16 cents per foot, retail, respectively.

Big Activity at New York

October building totals at New York show an increase of about 25 per cent. over the figures of the same month of a year ago. In Manhattan, plans were filed for new buildings to cost \$21,177,000, with total construction of all kinds well over \$30,000,000. Since the first of the year, permits have been issued for 682 new buildings to cost \$106,518,604, as compared with 705 buildings in the corresponding period of 1920, with valuation placed at \$89,071,118.

High activity continues in the local brick market. From 40 to 45 cargoes are arriving weekly from the Hudson River points, with heavy sales and distribution thruout the Greater City. Quotations are firm at \$15 for first-quality material, with salmon and off-lots bringing \$13 and \$13.50 in the wholesale market. There are no quotations on Raritan brick at the present time. Building material dealers are asking \$17.50 and \$17.85 for good hard common, delivered.

Producers with open yards in the Hudson River district have closed down for the season, and the bulk of operations at the present time covers the loading of barges and shipping of material while transportation conditions are favorable. Modern yards in this section, equipped with mechanical drying systems, are continuing manufacture and current reports indicate that expectations are to run thruout the winter season.

Good business prevails in the line of other burned clay commodities. Flue lining is from 30 to 40 cents a foot for stand-

ard sizes, while wall coping is being retailed at from 30 to 35 cents a foot at the different supply yards. Partition tile ranges from \$120, for 2x12x12 inch material, to \$190 per thousand square feet for 6x12x12 inch stock. Fire brick holds at \$75 to \$80 a thousand, delivered on the job, and fire clay is selling at \$15 a ton.

New Jersey Maintains Operations

Every week at Newark, N. J., building operations are rounding out a total of well over \$500,000, with the bulk of investment going into residential work, and for which brick is in particularly fine demand. All other important sections in the northern district of the state show a corresponding advancement, while South Jersey, including Trenton and vicinity, is producing anywhere from \$150,000 to \$200,000 in building totals each week.

The Hackensack producing season for the open yards is over, and a single yard, equipped with steam dryer, is about the extent of manufacture thereabouts at the present time. The price at the kiln remains at \$16, average, while delivered material, direct from the yard to job by motor trucks, runs to \$18 and \$19, according to length of haul.

Trenton producers are selling good grade common brick at \$17 and \$18 on the job, with kiln prices holding at \$15 a thousand. The Independent Brick Co., one of the prominent producers in this section, is operating at fair capacity at its important plants.

Hollow building tile, 5 inch, ranges from \$100 upwards per thousand in different parts of the state, while 8 inch material is selling from \$200 to \$250 in the respective localities. Fire brick is priced at from \$70 to \$80, and owing to present market weakness, certain producers have withdrawn quotations temporarily. Sewer pipe has declined to a point of 45 and 50 per cent. off list and there is a certain lack of stability that is not satisfactory to dealers.

A number of plants have resumed production, including those of the National Fireproofing Co., idle for some time past, and increased working forces give an encouraging status to the situation.

Progress at Philadelphia

With building totals aggregating well over \$1,000,000 a week for current construction at Philadelphia, there is a decidedly healthy tone to the situation in this section. October records, totaling over \$5,500,000 bid fair to be duplicated with November work.

Philadelphia producers are selling common brick at \$20 a thousand, delivered. The last few weeks have developed an increased call for vitrified paving block, and at dealers' yards the price range for this latter material is close to \$50 a thousand.

A good grade of water-struck brick in the Philadelphia market is being sold at from \$30 to \$32, delivered, and employed in sizable quantities for exterior work. High grade face brick is operating under fair call, with \$45 to \$55 the price range for selected stock, both rough and smooth texture. Fire brick holds at a \$75 level.

An interesting report has been issued by leading brick manufacturers in Beaver County, the center, practically, of brick production in Pennsylvania, and well known for its flashed iron spot material. It is stated that plants will continue in operation for "average business" during the coming winter months, with heavy increase anticipated early in 1922 for spring de-

mand. An optimistic attitude is expressed for the business outlook in the brick industry.

Construction Advances at Wilmington

October building totals at Wilmington, Del., recently announced by the local building bureau show encouraging progress now going forward in this district, with work aggregating \$157,000 for this month, or an increase of over \$83,000 as compared with the corresponding period of a year ago.

Common brick remains at \$22 a thousand on the job; fire brick at \$75 and \$80; and good grade face brick procurable at \$50. Partition tile is being retailed at \$125 to \$130 a thousand, and hollow building tile, 5x8 inch, has receded to an \$80 and \$85, approximate, level.

Record Building at Baltimore

Construction activities at Baltimore are breaking all previous records, and the value and number of building permits issued up to the present time in 1921 exceed any corresponding period in the municipality. During this time the aggregate valuation of work stands at \$27,834,730 as compared with a previous high figure for the same period of 1920, of \$27,177,550, or a gain of \$657,180. During the past ten months two-story and three-story brick dwellings to a valuation of \$3,749,000 have been erected.

Baltimore brick manufacturers are pricing common brick at \$21 a thousand, while supply dealers, handling out-of-town material are asking \$23 and \$24 for good grade stocks. Selected water-struck material at the local yards is around \$27, while colonials and high grade face favorites vary from \$40 to \$52, delivered. Standard fire brick is at \$75 and \$80, while fire clay is around \$19 a ton.

The Pittsburgh District

The arrival of cold weather has already caused a slackening up of outside building, altho the demand for brick, and practically all other building materials is still steady. A concerted effort will be put forth by realtors, financial interests, building supply dealers and others of Pittsburgh to render the seasonal falling off as negligible as possible this fall in order that the expected building boom next spring will not be hampered by leftover work.

Within the past month several investment building projects have been announced. A. W. Thompson, head of the Commerce Housing Corporation, organized by the Pittsburgh Chamber of Commerce to meet the housing shortage in this city, announced last week that two large insurance companies of the east had each deposited \$2,000,000 in Pittsburgh banks to be lent to prospective builders on mortgages and Postmaster George W. Gosser, speaking before a meeting of the Pittsburgh Association of Credit Men last week, told members that if a bill now pending in congress is passed, \$4,000,000 will be released from postal funds for the building of dwellings in this district. The bill was introduced by Congressman M. Clyde Kelly, of Pittsburgh.

At Cleveland

Efforts toward promoting building thru the winter into next spring, so that a normal production will be realized not later than March 1, were taking still more definite shape this week, in the adoption of a plan by the General Contractors' Association of Cleveland and a series of suggestions that will be offered to the committee to be named by the mayor's unemployment conference of 50. The contractors offer the following for investigation: Seasonal unemployment, wages, hours of labor in each trade, working rules and conditions, relation of wages to living costs jurisdictional disputes, apprenticeships, finance, materials, sanitary and safety conditions, coordination of labor bodies and employer associations, the appointment of

the committee as a permanent Cleveland institution, and less duplication of contractors' figuring from architects' plans.

One of the most comprehensive steps toward unity between employers' associations and labor organizations is being taken by the Building Trades Employers' Association and the Building Trades Council this week. Preliminary work on reaching wage agreements and working rules has started. Present agreements expire March 1. It is planned to come to an agreement on these factors before that time, so that there will be no hindrance to actual building operations at the busiest period of the year, around May 1, when, as in former years, agreements expired. The plan also calls for the drawing of agreements by a committee representing the different building trades, and another the employers' organizations, instead of separate deals between individual unions and contractors' associations. Adoption of this plan means a standardization of agreements. Three factors to be considered this year are those relating to the open shop, restrictive working conditions, and wages relating to living costs.

Columbus Construction Active

The records of the Columbus, Ohio, Building Department show that up to the middle of November a total of 980 homes were either completed or started within the corporate limits of the city. Since the signing of the armistice a total of 3,500 dwellings have been erected in the Buckeye capital and a good many more are projected. It is believed that fully 1,050 dwellings will be licensed by the department during the present year. This does not include the home building which has prevailed in the municipalities surrounding Columbus and it is estimated that fully 450 homes have been started or are under course of construction in these suburbs.

Will Clean Up Chicago Situation

The citizen's committee in Chicago which was formed to enforce the Landis wage award among the building trades unions and contractors has gotten to work in earnest. Some of the important points brought out at a recent meeting of the committee, according to the American Contractor are:

(1) There are 44 out of 51 trade unions which have accepted the conditions of the award. These unions will receive 100 per cent. support from the citizen's committee.

(2) In the case of the seven recalcitrant unions, men will be placed upon jobs regardless of their union affiliation.

(3) A vast sum of money will be at the disposal of the committee.

(4) Contractors who cooperate will be given protection and will be helped to get men. Contractors who violate will have heavy pressure exerted against them.

(5) Chicago's building situation will be cleaned regardless of sacrifice on the part of interests which may perhaps have to sacrifice to the point of extermination to clean up the conditions.

The carpenters have announced their intention to fight the enforcement of Judge Landis' wage award and will seek the aid of other building trades. A condition of open shop already exists in that trade in the city.

In spite of labor difficulties a fair amount of building is going on. The type of building providing the most work for the clay products manufacturer in Chicago at present, is the small two and three-story apartment.

Much Material Moving to Minneapolis

Increases in the carload receipts of brick, building tile and the like, of stone granite and marble and a particularly heavy increase in receipts of sash, doors and blinds were shown for September by compilations of the Minneapolis Traffic association covering that month. Building and roofing paper receipts also almost equalled last year's. Increased building of

(Continued on page 240)

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

POTTERS TO MEET AT WASHINGTON

THE WILLARD HOTEL, Washington, D. C., famed for its notable gatherings of the past, has been selected by the United States Potters' Association for its annual meeting this year, which will convene Tuesday morning, December 6, and continue until the evening of December 8, when the annual banquet will feature the close of the sessions.

Frank P. Judge, secretary and general manager of the National China Co., of Salineville, Ohio, now second vice-president of the Association, will be advanced to the presidency. Whether the executive position or office of first vice-president will be abolished this year remains to be determined. This office for many years has been held by William Burgess, identified for years with the International Pottery Co., of Trenton, N. J., and whose work has in the main had to do with tariff matters, insofar as they relate to the American ceramic industry.

May Abolish Job of Third Vice-President

Mr. Burgess, however, recently was selected by President Warren G. Harding as a member of the Federal Tariff Commission, and he therefore immediately resigned as a member of the United States Potters' Association. Since then the office has been vacant.

It may be that the position of third vice-president will be abolished this year, and then will follow the elevation of first vice-president to the presidency. The rule of years has been that the second vice-president be advanced to the presidency.

Secretary-Treasurer Charles Foster Goodwin will be re-elected, and there will be a few changes in the personnel of the various committees.

The first session of Tuesday morning, December 6, will be an open one, while all others are expected to be executive in character, the salient feature of this first session will be the presentation of the annual report of W. Edward Wells, of the Homer Laughlin China Co., East Liverpool, Ohio, as chairman of the Labor Committee. Mr. Wells in this report will survey the labor difficulties the manufacturers have had to contend with during the last fiscal year, and will no doubt go into great detail concerning the annual wage conference which was held at Atlantic City last August with representatives of the National Brotherhood of Operative Potters.

Kiln Drawers Resume Work

He will also, no doubt, touch upon the action of the kiln drawers of the potteries in the East Liverpool, Chester

and Newell, W. Va., district going on strike a fortnight ago without cause. Happily for the industry, however, these workers have resumed their places and at the same rate of wages as prevailed before they went on strike.

The annual report of the Statistics Committee, which will be presented by Mr. Mayer of the Mayer China Co., of Beaver Falls, Pa., will bear out the story of the imports of ceramic ware during the last fiscal year as has been published in this department of Brick and Clay Record.

In arranging the details of the annual banquet, which will feature the evening of December 8 at the Willard, William L. Smith, Jr., of the Taylor, Smith & Taylor Pottery Co., together with T. A. McNicol of the T. A. McNicol Pottery Co., of East Liverpool, Ohio, have received acceptances from some of the most noted men that they will be guests of the Association that night. Several of the speakers will be those who possess an international reputation in the affairs of the world, and indeed it would be no surprise at all to learn of some very high Government officials being seated at the festal board.

Meetings of the Association in past years have continued but two days, but this year there has been an extension of one day.

* * *

EXPOSITIONS AT PITTSBURGH AND CHICAGO

The annual Pottery Exposition will be held in the Ft. Pitt Hotel, Pittsburgh, Pa., commencing the first Monday in January and continuing three weeks, probably four. The manufacturers who will maintain displays at the Ft. Pitt will go to Chicago in February, where the first Chicago Pottery Exposition will be held. Several entire floors in the Hotel Morrison have been engaged for this purpose. Buyers of dinnerware for the various Chicago department stores were instrumental in pulling the Hotel Morrison show over, as they contend that many of the smaller buyers from the West, North and Southwest would then come into the market to buy American dinnerware instead of going to Pittsburgh.

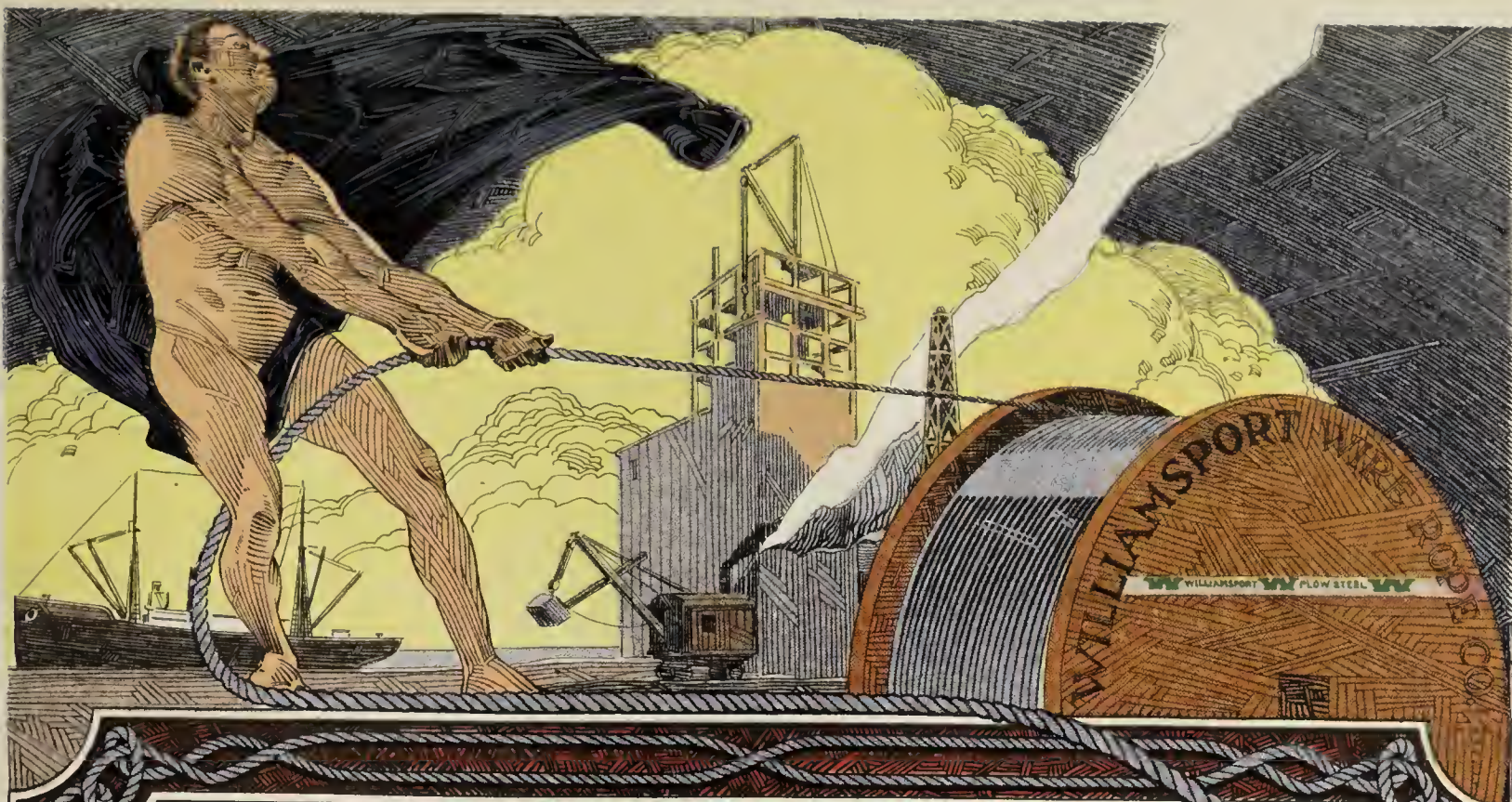
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POTTERS PREPARE FOR ACTIVE DEMAND

The larger buyers of dinnerware and stoneware have begun to anticipate their requirements for the first three months of 1922, and a number of the larger pottery manufacturing concerns during the last fortnight have reported a favorable amount of advance business on file and all for first quarter delivery in 1922.

The production of the East Liverpool and Sebring, Ohio, pottery districts is considered now the best of the year. The majority of the plants are operating almost on normal schedules, altho there are a few shops which are running between 50 and 75 per cent. of capacity.

In a general way, demand for American dinnerware this fall has been active. Stocks in the hands of the jobbing and retail interests are not extensive, in fact they are considered low. Buyers for these concerns have been ordering in sufficient quantities for immediate requirements



WITH THEIR PATENTED TELFAX TAPE MARKER

"WILLIAMSPORT"

Reveals to you the Greatest Advancement of all times in the making of Wire Rope

—and settles forever today's greatest problem in the wire rope industry, by making it possible for anyone to identify the various grades of Williamsport wire rope without an exhaustive and expensive laboratory test.

Beginning November, 1921, every inch of Williamsport Wire Rope contains a distinguishing Telfax Patented Tape Marker, built right through the core of the hemp center, indicating clearly, by distinctive design and color, the various grades of wire rope.

No greater achievement has been accomplished since the beginning of wire rope manufacture. It takes from the industry, as far as Williamsport is concerned, all mystery, all uncertainty, all doubt.

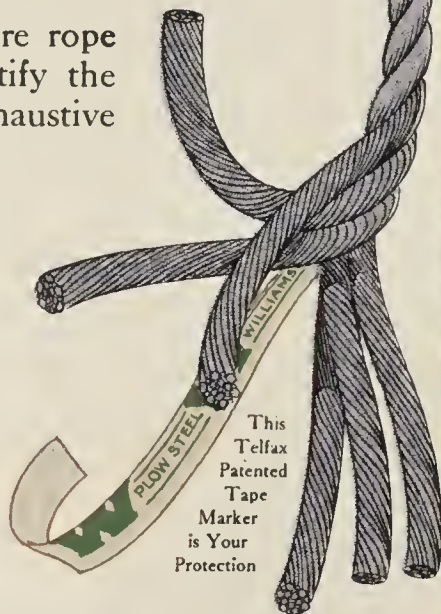
It enables the purchaser to buy with the assurance that their receiving department can tell exactly what has been received, and the superintendent, directly responsible for the lives of his workmen and the efficiency of his equipment, can now see instantly, for himself, that he has received exactly what he has asked for.

Thus Williamsport stands alone in giving to the dealer and user a protection of vital, far reaching importance. And it places upon us a greater responsibility to exercise even greater diligence in keeping the quality worthy of the name it bears.

Never again will you need to feel concerned about the grade of wire rope you get, if you specify and insist upon getting WILLIAMSPORT, Telfax Tape Marked, for substitution cannot take place with Williamsport Wire Rope so marked, no matter

- How many hands it passes through en route.
- How many times it changes reels.
- How careless the warehouseman may be.
- How tricky the seller may be.

If you want to be certain of getting the grade of wire rope you buy—specify "Williamsport". Send today for your Telfax color chart and other literature on this Modern Wire Rope.



WILLIAMSPORT WIRE ROPE COMPANY

Main Office and Works

Williamsport, Pa.

"accepted as the best"

General Sales Office: Peoples Gas Bldg.

Chicago, Illinois.

The Cloud of Uncertain



Now You May Know You'll Get the Grade of

WILLIAM

The WIRE ROPE with the Telfax Taper

TELFAX MARKERS ARE PATENTED IN THE U

ty and Doubt has Lifted



WIRE ROPE You Buy —if You SPECIFY

DISPORT

marker that absolutely prevents Substitution

U. S. A. AND CANADA. FOREIGN PATENTS PENDING

YOU have been GUESSING on the grade of wire rope you have received ever since Wire Rope has been made. Now is the time to STOP IT. Specify WILLIAMSPORT with these Telfax Tape Markers in them — they will absolutely safeguard your purchase.



Write today for your Telfax Color chart and an interesting booklet on Modern Wire Rope

WilliamSPORT Wire Rope Company

GENERAL SALES OFFICES
PEOPLES GAS BUILDING
CHICAGO

PLANT
WILLIAMSPORT
PENNSYLVANIA

WAREHOUSES IN ALL
CONVENIENT LOCATIONS IN
AMERICA

only, and should their holiday trade prove active, it will not take long to clean the shelves and the bins. Then will follow an exceptionally active demand for merchandise in January.

Buyers for the larger distributing interests who have been in the East Liverpool market during the last month say that they have been favored with an excellent demand for staples, and that these stocks must be kept up for the first quarter of business next year. They are ordering accordingly. The large syndicate store buyers have also been in the market anticipating requirements for 1922 as well as the buyers for the mail order houses.

Unless there is an unlooked for change in the situation, the generalware potteries during the first six months of the new year will be operating under normal schedules.

* * *

IMPORTING ENGLISH CLAY FOR PAPER

English china clay to be used in the manufacture of paper is being imported by Morey & Co. of Boston, Mass., for shipment to San Francisco, Seattle and other coast ports. They have chartered regular steamships for the new service, since the manufacture of book and other paper in the Northwest has reached sufficient proportions to warrant full cargoes of this product. The bulk of the first shipment of several hundred tons, arriving the early part of November, was consigned to the Inland Empire Paper Co. in Millwood, near Spokane. The movement to the Northwest is being handled for the Boston company by W. J. Byrnes & Co. of Seattle.

* * *

R. THOMAS PLANT WORKING NORMAL

The two plants of the R. Thomas & Sons Co., at East Liverpool and Lisbon, Ohio, are now working about normal schedules. There has been quite an improvement in the demand for electric porcelain ware during the last few weeks, and as stocks in the hands of distributors are considered low, the situation is soon reflected in the electric porcelain plants. This concern was one of the first in the United States to develop the firing of electric porcelain ware with oil.

* * *

FLINT AND FELDSPAR IN GREATER DEMAND

Distributors of flint and feldspar say that they are experiencing a greater demand for these raw pottery materials, and this of course indicates that pottery plants are steadily increasing their output. During the summer season, the majority of these plants had very little business on file, due to the inactivity of the general pottery industry.

* * *

MADDOCK SECURES FINE ORDERS

The Thomas Maddock Sons Co., Trenton, N. J., has secured an order for sanitary fixtures to be installed in the new city hospital at Cleveland, Ohio. The company will also supply about 1,000 pieces of ware, including jets, lavatories, etc., at the Biltmore Country Club, New York.

* * *

NOVELTY COMPANY WILL NOT MOVE

Decision has been made that the plant of the American Bisque & Novelty Co. will not be removed to Columbus, Ohio, but will remain in Williamstown, W. Va., which is directly across the Ohio River from Marietta, Ohio. Under the management of J. M. Crafton, formerly of East Liverpool, this firm has developed a new line of china specialties, which is not duplicated in the United States, it is said. The

capacity of the shop is to be increased immediately by the erection of additional buildings, and also an additional kiln. The glazes used in this line are exclusive with this firm, and they are quite different from any others now being featured in art and specialty ware.

Serious consideration had been given the proposition to transfer the plant and business to Columbus, but later it was decided to remain in Williamstown and expand.

* * *

JOSEPH BARLOW DIES SUDDENLY

Joseph Barlow, for a number of years one of the owners of the Colonial Pottery Co., of East Liverpool, Ohio, died suddenly November 14. He had been in ill health for several years. Mr. Barlow was the father-in-law of William L. Smith, Jr., general manager of the Taylor, Smith & Taylor Pottery Co., of Chester, W. Va. He was a native of the pottery districts of England, and came to East Liverpool when a young man. He followed the trade of dipping. He was very active in his earlier years in politics in East Liverpool, having been elected to the East Liverpool City council for four terms of two years each, and later served as city treasurer for four years.

* * *

PREPARING FINE DISPLAY ROOM

Within a few weeks the new sample room of the Taylor, Smith & Taylor Pottery Co., at Chester, W. Va., will be ready for the reception of buyers. The room was designed and interior arrangements perfected by William C. Lynch, secretary and sales manager for this company. Here and there about the spacious room are seven small booths, each brilliantly electric lighted in which the different decorations will be placed before the eyes of the buyer. By this plan, the decorations will show up just as they would when on the table in the home during the evening dinner. The room is the only one so arranged in the entire pottery district, and it is also sound proof.

The general offices of this company are on the first floor of this new building, while in the basement, steel cases have been placed in which the decal sheets are kept.

* * *

URGES PROCEEDING OF CONSTRUCTION

Under the caption "Let's Get to Work," the Standard Sanitary Mfg. Co., Pittsburgh, Pa., has been publishing an inspiring message in different daily newspapers in the eastern district. A strong appeal is made for the resumption of construction operations to the greatest possible extent, as well as the execution of repair and remodeling work, as may be necessitated at the present time. It is set forth that activity in the trade will give employment to many thousands of workers. Considering its own line of production the company urges plumbing installations thruout the winter season, holding that operations of this character will give employment to many workers in other lines such as carpenters, painters, etc.

* * *

WESTERN POTTERIES IDEAL FOR WORKERS

William Mushett, of Trenton, N. J., a member of the Health Committee of the National Brotherhood of Operative Potters, has completed a detailed survey of the potteries in the western territory, and has declared that for convenience to workers and cleanliness, the different plants are not excelled anywhere. The detailed report will very likely be presented at the annual meeting of the United States Potters Association, which will be held in Washington, D. C., December 6 to 8.

BURNING WARE WITH OIL

An oil burning system has just been installed in the plant of the Zanesville (Ohio) Stoneware Co. The Colonial Pottery Co. of East Liverpool, Ohio, is also equipping its kilns with a similar system. The manufacturers using this system say that they save more time in the firing of kilns and also save in the cost of fuel over the use of either gas or coal.

* * *

EMPIRE CHINA CO. STARTS WORK

Operations have begun at the new plant of the Empire China Co. at Los Angeles, Cal., and the first hollow ware was poured some time ago. The company, which has been described in a previous issue of Brick and Clay Record, will manufacture approximately 3,000 pieces of finished china daily, which according to a report will represent an annual turnover of about \$800,000.

* * *

CHELSEA CHINA BUSINESS ACTIVE

An active demand for the vitreous china hotel line of the Chelsea China Co., at New Cumberland, W. Va., is reported. This shop has undergone a number of improvements since it was placed under the management of Herbert Goodwin, of East Liverpool, Ohio, while under the sales management of Col. Will A. Rhoads, sales have been soaring. This shop was the first of the potteries in the Ohio Valley district to have a tunnel kiln installed.

* * *

HALL CHINA CO. STARTS WORK

The No. 2 plant of the Hall China Co., which has been inactive for some months has been placed in operation, which leaves only one plant unit in the East Liverpool territory idle, this being the No. 2 plant of the Potters Co-Operative Co. The Hall company is making a special feature of fireproof cooking ware for hotel and restaurant purposes, altho it has quite a line for home use. It has been called the "teapot house of America."

* * *

TO BUILD FELDSPAR GRINDING MILL

The Pennsylvania Glass Sand Co., Lewiston, Pa., will soon commence the erection of a new one-story plant at Rochester, N. Y., 50x130 feet, to be equipped as a feldspar grinding mill. It is estimated to cost about \$50,000 with equipment.

* * *

MEMPHIS TO HAVE CROCKERY PLANT

The Goodwin Crockery Co., Memphis, Tenn., recently organized with a capital of \$125,000, will establish a local plant for the manufacture of high-grade crockery products. Plans for the structure are under way.

* * *

NEW JERSEY CONCERN TO INCREASE

The New Jersey Porcelain Co., Trenton, N. J., has filed plans for the erection of a three-story addition to its plant on Pennsylvania Avenue for increased production.

* * *

CHICAGO CONCERN TO MAKE CHINA

The Chicago (Ill.) China Decorating Works, Inc., 1529 West Twenty-first Street, has been incorporated with a capital of \$20,000, to manufacture china and pottery products. The incorporators are Edwin M. Conway, Jacob Williamson and R. E. Leopold.

BUILDING TWO ADDITIONS TO PLANT

The Acme Sanitary Pottery Co., May Street, Trenton, N. J., manufacturer of sanitary earthenware, has awarded a contract to Solan & Dotter, Inc., Trenton, for the construction of two new additions to its plant. The larger building will be two story, 30x128 feet, and will be used for warerooms, offices and other service. The other building will be one story, 20x60 feet, for general operations.

* * *

POTTERY ADDITION STARTED

The Camden (N. J.) Pottery Co., Mount Vernon Street, manufacturer of sanitary earthenware, has commenced the erection of the superstructure of its new two-story addition, 30x70 feet, at Orchard and Chestnut Streets, estimated to cost about \$30,000.

* * *

PHILADELPHIA REPORTING GOOD BUSINESS

Pottery dealers at Philadelphia, Pa., report fair sales of china and crockery products, with dinnerware specialties the most active at the present time. Whiteware, with a simple gold border, is growing very popular, and the call for this character of material is on the increase.

* * *

JEFFERY-DEWITT IS BANKRUPT

The Jeffery-Dewitt Insulator Co., of Kenova, W. Va., has filed a voluntary petition in bankruptcy. As far as can be learned the company will be operated by the creditors as long as orders enough come in to operate the plant profitably.

* * *

ELECTRICAL PORCELAIN PLANT SHUTS DOWN

The plant of the Brunt Tile & Porcelain Co., located at Chase-land, a suburb of Columbus, was closed down late last month for an indefinite period. It may be idle two or three months, depending on conditions and demand. A number of improvements to the plant have been completed and it will be ready for operation on a moment's notice. Electrical porcelain is manufactured.

* * *

PLANS BUILDING NEW PLANT

The Superior Tile & Products Co., 1910 Prince Street, Berkeley, Cal., has preliminary plans under way for the erection of a new plant, estimated to cost about \$15,000.

* * *

ORGANIZE PORCELAIN COMPANY IN CHICAGO

Charles G. Rush, H. Jones and L. L. Cowan are incorporators of the Rush Porcelain Co., Room 1922, 24 Archer Ave., Chicago, Ill. The company has recently been organized with a capital of \$40,000, to manufacture porcelain and associated products.

* * *

An indefinite shut-down has begun at the plants of the Western Stoneware Co. and the Buckeye Pottery at Macomb, Ill.

* * *

ORGANIZE CHINA COMPANY AT PORTER, IND.

For the purpose of manufacturing ceramic goods, the Columbia China Corporation has been organized at Porter, Ind., with a capital stock of \$500,000. Half of the capital stock is represented in preferred stock and half common. The organizers are Anton Schmidt, J. R. Mendelsohn, E. T. Morris, L. I. Sutterman and J. S. Cox.

The Superintendent

Helpful Hints for Practical Men
Whose Problem is Maximum
Production with Minimum Cost

FIGURING STRENGTH OF ROPE

Where there is occasion in the clay plant to subject rope to heavy strains, it is well to have a knowledge of the strength of a rope. The Bureau of Standards Laboratory in the Department of Commerce has made tests, and as a result has compiled a formula whereby it is easy to estimate the maximum strength of a rope. For three-strand regular lay Manila rope from $\frac{1}{2}$ to $4\frac{1}{2}$ inches in diameter, the following computation can be used to arrive at the breaking load of the rope:

The average breaking load in pounds equals 5,000 multiplied by the diameter of the rope in inches, multiplied by the diameter of the rope increased by one. The resultant figure will be the average maximum strain to which a rope can be subjected. However, the daily working load must be considerably below this to insure safety and efficiency.

Other data on rope are contained in the technological paper of the Bureau of Standards No. 198, by A. H. Strang and L. R. Strickenberg, which has just been issued.



HOW TO CARE FOR FUEL-OIL BURNERS

The most essential thing in the proper handling of fuel oil burners is to keep them thoroly clean. To insure this they should be taken apart as completely as possible periodically and every part cleaned separately with kerosene or gasoline and a brush. The use of a good brush is important as cloth or waste is very apt to leave lint or threads, tending to clog up the outlets. If carbon has collected on the tips it should be carefully scraped off before reassembling.

Reassemble all parts carefully and accurately and test for

leakage. It is best to use water for this purpose. Simply connect a hose to the feed valve of the burner and apply approximately the same pressure as the oil exerts on the burner. If no leaks occur with the water test there will be no leaks with the oil.

The clogging of burners is usually caused by one of two things, either some foreign matter, due to improper straining of the oil, becomes lodged in the burner, or the oil becomes carbonized in the burner. Whenever it does become clogged it is the best policy to turn off the valve immediately and blow steam thru in an effort to remove the obstacles.

In the use of oil burners in kilns there is always more or less danger mainly because of careless handling. When lighting it is always good practice to use a torch several feet long and to stand on one side while igniting the oil. This is a safety measure to avoid the danger of the back-flashing of the flame. Back-flashing can be caused by a small leak causing oil vapors in the arches or fire boxes. It is important that all leaks be immediately looked after and the waste oil wiped up.

If for any reason the flame of a burner is extinguished, always turn off the valve before relighting, and never permit a burner valve to remain open after the flame has been extinguished. Oil burners for proper service require frequent inspection.



MAKING 300,000 BRICK DAILY

Danville, Ill., has no unemployment problem to solve. All its industries are busy, and the Western Brick Co., the largest face brick concern in the city, is working to capacity, which is approximately 300,000 brick daily.

Heat Transmission in Burning Clay Ware

It is a good plan to analyze your furnace and kiln conditions, and to study the manner in which the heat is generated in the fire boxes is being transmitted from the furnace and distributed thruout the kiln.

Radiation is one of the most powerful factors of heat transference, and is very important in the burning of clay ware. Convection and conduction of heat are also called upon in firing clay products.

Much depends upon the kind of fuel used to the importance of these various factors of heat transference. The gases given off by the fuel burns all the way from the fire box to the bottom of the floor. A long flame coal especially burns clear to the bottom of the kiln floor—a long distance. In this case convection is largely instrumental as a means of heat transference.

A short flame coal gives localized heat and the energy must be conveyed to the farther corners of the kiln by radiation, and also by convection, which is accomplished by means of draft.

Heat can be conveyed in an indirect manner of firing. By introducing steam in a fire box you dissociate the water into its component gases which burn in the interior of the kiln, and the gases in the fire box are also cooled. In this manner you are taking heat from the furnace and then letting it free in the kiln proper. This is done in oil firing and for this reason steam is used instead of air. It is also easier on the refractories.

We cannot heat up a piece of clay ware any faster than that particular substance can absorb the energy. Here is where conduction is an important property. The amount of the surface exposed per unit weight of ware is a very important factor in the speed and economy of firing. The greater the area of the surface exposed per unit weight of ware, the better the opportunity for taking up the heat from the surrounding atmosphere. Naturally it follows that thin-walled ware even in proportion, is capable of being matured faster than thick-walled pieces.

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Working Branch Are Called Into
Consultation—Their Advice Is
Free to You, Thru These Columns

Address all communications intended for this department to "Editor
Questions and Answers, care of Brick and Clay Record," Chicago.

REGARDING PAYMENT OF ROYALTIES

1,005. *New York*—I am expected to be a member of a party in arranging for a lease on some clay on a royalty basis and am desirous of knowing what would now be considered a fair price to pay per ton. Also how best to fix rate as to capacity on a sliding scale if this is customary, and time allowance for idleness of plant. The clay is suitable for making common, face brick, and hollow tile; it is classed as a No. 2 fire clay and must be mined.

Previous to 1914, the royalty paid on clay mined underground in Illinois and Missouri was eight or ten cents per ton. Naturally the law of supply and demand governs in a case like yours very materially.

The points that you bring up about time allowance for idleness of plants and the sliding scale of royalty are points that should be answered by an accountant after you determine the royalty that you are able to pay.

We have also received two definite expressions from men who are well informed. The first is as follows: "In leasing clay on a royalty basis, the price per ton would, of course, be governed by the quality of the clay, the kind of product being manufactured from same, the cost of mining, and so forth. On a royalty basis, a clay suitable for making common brick and hollow tile would be valued at from five to 15 cents a ton in the ground. In the Woodbridge section of New Jersey, a certain clay property is being mined on a royalty basis of 25 cents per ton. This clay, however, was of high quality, and used for the production of high-grade materials."

An old clay miner in New Jersey gives us the following information: "It is hard to state today what would be a fair royalty for brick. In olden times it was 50 cents a thousand. When I leased my plant in 1916 it was for a lump sum per year, work or play. Fire clay in the past has been leased at from ten cents to \$1.50 a ton, according to quality, with a minimum royalty—lately, the royalty has been ten per cent. of the selling price. I think it would be fair to take a basis in weight of 50 cents per 1,000 brick as to tonnage, and figure tonnage on hollow tile that way. Where the plant is situated as to market, cost, and so forth, would have a bearing on the royalty."

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WHO MAKES THIS PRODUCT?

1,007. *Pennsylvania*—Do any of your readers make clay products similar to the uprights on the different gas stoves on the market, the hollow tube kind about six or eight inches long—open grill in front?

We understand that the Novelty Clay Manufacturing Co., of East Palestine, Ohio, are in a position to supply the needs of this inquirer. Undoubtedly there are also other manufacturers of similar products who might be able to take care of a demand for fire clay fronts for gas radiators. If there are, Brick and Clay Record would be glad to have them communicate with it.

REMEDIES FOR FALLING ARCHES

1,008. *New York*—Falling of the arches in our round down-draft kilns which are burned at a temperature of 2,000 deg. F., has given us considerable trouble. Can you suggest anything to remedy this?

Can you also tell us whether or not the perforated bag wall is in general use in kilns of this type, and whether the single well in the center of the kiln floor is as favorably considered as the perforated floor?

In regard to this question Otto Sprunge, of the Purington Paving Brick Co., Galesburg, Ill., has the following to say:

"It is rather difficult to give reasons for the failure of kiln arches, not knowing anything about the construction of those in question. I assume that the correspondent refers to the kiln crown as the arch, or does he mean the fire box or flue arch?

"If the crown is referred to, and has sufficient rise for the diameter of the kiln, then I would attribute the failure to faulty construction. I would first see that bands and rods around kiln at skew-back of crown were of ample strength.

"Second. Use fire brick in construction, laying these in fire clay mortar, making joints as thin as possible, avoiding the addition of much sand in fire clay mud.

"Third. It is better practice to use a course of wedge brick occasionally than to try to turn arch with standard fire brick bedded in heavy joints on top ends.

"Generally speaking, a crown with a little too much rise is better practice than one too flat.

"Fourth. After crown is turned, would slush it with thin fire clay, then cover with two inches of green clay and pave with red brick, grouting these with cement slush. The crown should be backed up from top of kiln well to about one-third way to top of crown with red brick, so that sufficient weight is obtained on top of crown at skew-back.

"In most plants at the present time, the solid bag wall seems to be in most general use, but there is considerable difference in opinion as to the most favorable floor design. Some find the center well hole best adapted for their purpose, but I think in the majority of cases the combination of the two; i. e., the center well hole with ribs and slot perforations leading to same will predominate."

W. F. Grant, ceramic engineer of the Elk Fire Brick Co., St. Marys, Pa., suggests a remedy for the problem of falling arches.

"I assume that this refers to the arches in the fire boxes and will base my observations accordingly.

"As I see it, trouble of this nature may be caused by two things: In the first place, it is always advisable and in some cases absolutely necessary to use nothing but a good quality of refractory material for the arches and lining of the fire boxes, for furnaces, and if the New York subscriber is not following out this practice it may be due to this cause alone that he is experiencing trouble. In the second place the draft of his kilns should be carefully investigated. If for any reason he does not have sufficient stack area, flue area or other outlet to carry off the products of combustion, the heat generated in the fire boxes will necessarily be more or less "bottled up" thereby melting or otherwise burning out the arch brick and lining brick in the fire boxes themselves.

"In the opinion of the writer it would be a very difficult proposition to avoid arch trouble unless the draft conditions are correct. I would hardly be in position to answer the question regarding single well in the center of the kiln floor as compared with the perforated floor. In our own particular plant we do not use the center well hole because of the fact that all of our round down-draft kilns have multiple stacks and consequently we use riddle flues.

"As regards the perforated bag wall, while not in general

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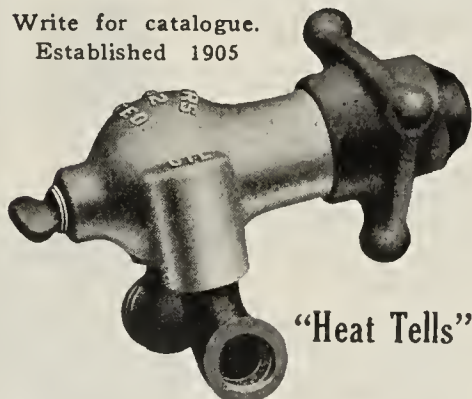
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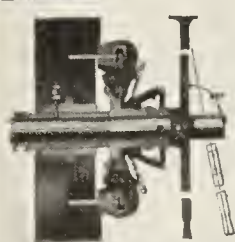
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nse in this part of the country, we believe they can be used to advantage where the flashing effect of the flame is not detrimental to the ware produced. For instance, if the ware is set next to the bag walls and can be flashed without reducing its value, we believe that the perforated bags can be used advantageously as they no doubt tend to give somewhat more even distribution of heat, especially in the lower courses of brick near the outside ring than otherwise."

A description of the method used by the Metropolitan Paving Brick Co., Canton, Ohio, in building fire box arches has been submitted by Frank Mahurin of that company.

"I can tell you how we build our fire box arches and they stand up in pretty good shape. Do not know how your correspondent builds his so cannot comment on his methods. We build our lining and arch entirely free of the kiln and do not tie the fire brick to the kiln. This means that any difference of expansion between the lining and the kiln does not tend to break the brick used for the tie. The lining is built of high grade fire brick; the side walls are nine inches thick and the joints made very thin. The arch is built with 7x9 inch end wedges, also high grade fire brick, and these make the arch nine inches, the same as the side walls. Any first-class fire brick will stand the temperature necessary, and the mortar used and method of laying up is probably the most important item to be watched.

"We use three or four parts of fire clay and one part sand for the joints. The sand is reclaimed settlers sand. This is mixed with water, and mixed very thin, and the brick when laid are hammered to a tight joint. This makes a good arch with no danger of the joints burning out. The space between the fire brick and the brick work of the kiln is filled in as the fire brick are laid.

"The perforated bag wall is an advantage in this type of kiln if the diameter of the kiln is not too large. The solid bag wall tends to throw the heat to the center of the kiln more than the perforated bag wall. I would say that round kilns over 24 feet in diameter would operate better with a solid bag wall. The height of the bag wall has the same effect.

"The single well kiln floor is not considered good practice in kilns burning brick. The open or checkered floor will give much better distribution of draft during water-smoke and will finish this stage in much less time. It is a simple matter to check the draft if there is too much, but it is hard to increase it if there is not enough. The single well might be very satisfactory in a small kiln burning tile or a like product, but would advise strongly against it in a kiln used to burn brick."

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FIGURING BRICK IN THE HOLLOW WALL

1,099. *Alabama*—I am building a house with brick hollow walls—lower floor 12 inches and upper eight inches, and I am very much pleased with it so far. The question has arisen, however, between the bricklayers and myself, as to how many brick per foot of wall I should pay the men for laying, and also as to the size of openings I should get the benefit of. They are asking for the same count as for brick laid flat on a solid wall, which I believe is 21 for 12 inch and 14 for the eight inch wall.

I will appreciate it if you can advise me as to the correct count on brick laid on edge as I am doing it in this wall.

Regarding this question, Ralph P. Stoddard, secretary-manager of the Common Brick Manufacturers' Association, has the following to say:

"If you are paying the bricklayer by the thousand it probably would be equitable to pay him a little higher rate on the hollow wall than on the solid wall. Altho in many instances the bricklayer is laying as many brick per day in Ideal wall as in solid wall, we concede for the purposes of estimating that

the quantity of brick laid in the hollow wall is a little less than in the solid wall.

"In the 8-inch all-rolok wall there are nine brick to the square foot of surface and in the 12 inch hollow wall 13 brick to the square foot of surface. A man who would lay 1,500 brick in an 8 or 12 inch solid wall should lay at least 1,200 brick a day in the hollow wall. He might not maintain this average at the very beginning, but we find that as soon as the bricklayers have a little practice they have no trouble in maintaining an average day's work.

"Even should you pay the bricklayers upon the basis of the number of brick in the solid wall, you still would save considerable money on your job, because the hollow wall takes a third less brick and only about half as much mortar and eliminates the cost of furring and lath."

The Letter Box

A Place Wherein Letters
That Have General Interest
Are Published
and Commented Upon

"GRIFF" TELLS THE WORLD ABOUT BRICK

Another of the interesting letters from "Griff" to "Perk" has been received by Brick and Clay Record and is reprinted herewith. Readers of this paper will recognize the letter as a bulletin of the same kind as that printed in this department several issues ago. The bulletin is gotten out by the Eastern Paving Brick Manufacturers Association, and the "Griff" and "Perk" referred to are J. E. Griffin, engineer, and Wm. C. Perkins, chief engineer of the association. The letter is published "with apologies to Ring Lardner."

Dear Perk:

Well i am still here in Pittsburgh it raining all the time & when you take a vacation in a car to see the buties of nature it aint much fun to look at them from behind a water screen but i gues i could see as much that way as from behind this smoke screen that they have out here. So having nothing else to do, Mary, she has went to the movies, i take my pen in hand to tell you something i seen in Wilkinsburg, knowing as how you was interested in streets good bad & indifferent this being one of the good ones.

Anyways we was coming along on Penn Ave., there at a good rate, it being part of the Lincoln Highway when we seen one of them De Tour signs. Them signs sure does take the De-Light out of touring. So being some ahead of skedule i just thought i would watch them work a wile & maybe tell them something of what i thought of them for blocking the highway.

It was an old brick street that they was fixing. First they took up the old brick which was badly wore on account of it setting on a poor seat. Then they was filling up holes in the seat with stuff they called slag. It aint like any which i ever seen so i asked a colored gentleman which was manipulating a shovel and he says that was made rock. Now i ask why make rock with so much of it around the country just lying idel & doing nothing. So he says that slag was full of iron & made it tough & better so i let it go at that not wishing to argu to much with no colored engr.

Anyhow they rolled the slag stuff with a big steam roller until it was nice and smooth & then put on it a thin coat of fine slag to set the brick on wanting to let the poor down trodden brick have something soft to set on all its life. Then they put down the brick which i hear some fellow says was verticle fiber. That done mean nothing to me but may be you has it in your category. Any how this brick was laid the rough side up which i thought was wrong & was going to tell them so but thought may be i better not as they might think i was buttin in. But i soon seen that i was wrong as usual, cauz they was soon putting on a lot of hot



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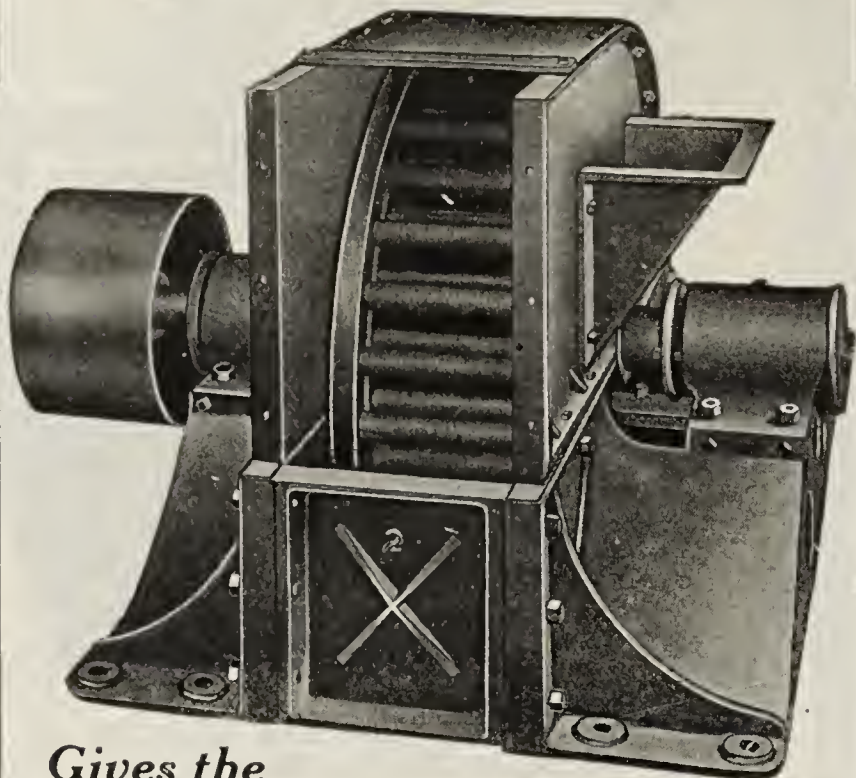
Philadelphia, Pa.

Boston, Mass.

New Orleans, La.

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BRICK MACHINES MIXERS TRUCKS BARROWS
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The quality of your ware depends largely upon your pulverizer. Fernholtz pulverizers give the best of satisfaction on surface clays to every user because they are practical and economical in every respect. All wearing parts are made of steel and all boxes are brass bushed and adjustable.

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FERNHOLTZ BRICK MACHINERY COMPANY
ST. LOUIS, MO.

WHAT METHOD DO YOU USE?

This question when applied to the manufacture of Stiff Mud Ware deserves consideration.

The Modern Way is the Right Way

THE ROLLER PRESS for all clays, shales, fire clays, surface clays, short bonding clays and laminating shales and clays.

Brick, Hollow Ware, Roofing Tile, Floor Tile and Drain Tile can be made on the ROLLER PRESS.

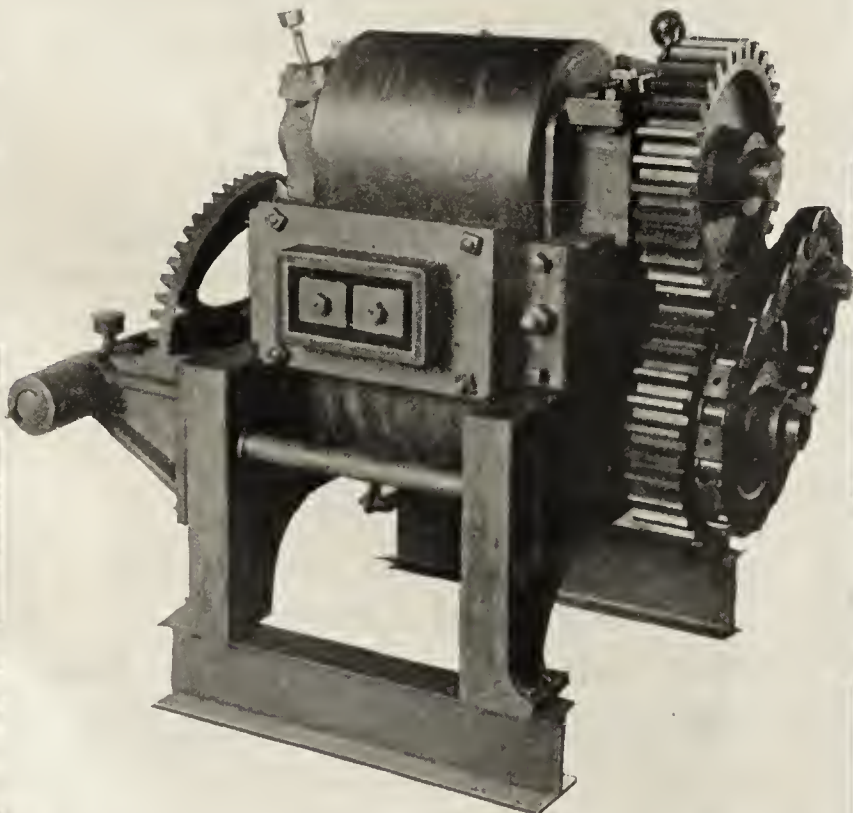
Start now to solve your production problems.

CLAYCRAFT SERVICE COMPANY

503 Wainwright Building

St. Louis, Mo.

Everything for the Clayworker.



black asbestos & colored gentlemen with hot irons was rubbing it down into the interstices of the brick. So I steps up to the Boss, a guy named Sperling, introduced myself and says I knows you & makes myself friends for life & he tells me somethings I don't know yet. This asbestos covers the brick with a thin sheet, it sticking to the rough sides and it wouldnt have stuck to the smooth sides & as I said before goes into the interstices of the brick (that is his word, not mine) & keeps it all from getting wet & frezing up when it gets cold. On top of this they was sprinkling a little sand & farther up the street the teams was traveling on it & say Perk, it certainly did look slick, almost like an asbestos street, no noise & Charley, I calls him by his first name now, tells me it will last forever cauz the brick is so tough that wear don't affect it none.

I says to Charley how much does this cost you and he says so far it averaged \$1.93 per sq. yd. which I thought was cheap for getting such a good road. So I say Perk, if you want to see a good street just come up to Wilkinsburg and if you want to know more I can give it to you straight.

That guy back home is going to get an earfull when I get there. I guess he will learn that all the good roads isnt in N. Y. City. Well Perk, Mary is come in now, so will have to close.

Yours,

Griff.

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MORTAR'S PART IN VAN BUREN STREET TUNNEL

The article in the November 1 issue of Brick and Clay Record regarding the Van Buren Street tunnel in Chicago attracted the attention of the Thomas Connelly Co., Chicago distributors of Utica Hydraulic Cement. The following letter asking us to recognize the part which the mortar played in the tunnel was received from them and is published herewith:

"In the November 1 issue of Brick and Clay Record appears a superb article proving the everlasting qualities of common brick in underground construction.

"There are two factors, both of equal importance, which brought about the results as found in the old Van Buren Street tunnel; first—the excellent common brick used; second—the Utica Hydraulic Cement mortar used in binding the brick together.

"Cases of sewer and tunnel failure there have been, but these failures were due to the poor quality of the cement employed, skimping of the cement mortar or the use of improperly burned brick.

"A failure is out of the question when well burned brick, Utica Cement mortar, plus proper laying up of the masonry is obtained.

"Substantial evidence to support this claim is found in the case of the old Van Buren Street tunnel.

"Quoting from the article in question—'In the 30 years underground brick and mortar had formed such a strong bond that the walls of the tunnel became practically as one piece;' note that no mention is made of the fact that it was Utica Cement mortar which produced this remarkable bond. Utica Cement is only used for the purpose of binding together burned clay products of every description—common or face brick, building tile, sewer pipe, and so forth. In no case does it come in competition with burned clay as a construction material. On the contrary it is only used as an imperative adjunct to burned clay. It is a booster of burned clay, not a knocker.

"That Utica Cement mortar was used in the old tunnel is attested by Thomas Moran, who acted as inspector on the job for the City of Chicago, Samuel G. Artingstall, engineer in charge, and Joseph Downey, the contractor.

"We respectfully bring these facts before you with the plea that you run a supplemental article to the one in the November 1 issue, crediting Utica Hydraulic Cement as the binding material used in the old tunnel.

"Kindly note that at the present time there is considerable agitation for subways in Chicago. Why not build these of brick?

"We believe that collective and harmonious boosting on the part of the clay journals, the brick manufacturers, the bricklayers' union and Utica Hydraulic Cement, would prove of great mutual benefit."

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The common brick manufacturers' convention at St. Louis, January 30, 31 and February 1 is one of the biggest events of the year. Don't miss it.

In the Wake of the News

Being Brief Mention of a Host
of Interesting Happenings in the
Varied Fields of Clayworking

A. L. HAWKES DIES AT AGE OF 79

Abner L. Hawkes, formerly proprietor of a brick manufacturing establishment on Hawkes street, Westbrook, Me., died at his home in that city on November 2. He was 79 years of age and prominent as a Mason and an Odd Fellow.

SAMUEL McELROY PASSES AWAY

Samuel McElroy, Huntingdon, Pa., well known in the local brick manufacturing industry, died November 12, at the age of 56 years. He had been engaged in the brick manufacturing business for 35 years.

H. M. WHITE VISITS HOCKING VALLEY PLANT

H. M. White, sales manager of the brick department of the Hocking Valley Products Co., of Columbus, Ohio, which operates a face brick plant at Greendale, Ohio, went to the plant the latter part of November to make an inspection. The plant is in operation with about a full force of men.

L. S. JONES BECOMES POLICE COMMISSIONER

Louis S. Jones, one of the big stockholders and treasurer of the National Tile Co. at Anderson, Ind., has been named by the Republican mayor-elect of that city to be a member of the board of police commissioners and will take office the first of the year. The appointment came as a surprise to the Anderson politicians, inasmuch as Mr. Jones has never taken any aggressive part in politics in that city.

C. U. HARRIS RESIGNS POSITION

C. U. Harris, for some years general manager and sales manager for the Paden City (W. Va.) Pottery Co., which concern is controlled by Pittsburgh, Pa., interests, has resigned to take the general management of the plant of the Sherwood Pottery Co., at New Brighton, Pa. The Paden City plant has been making a line of cooking ware, while the Sherwood shop has been manufacturing for years a general line of stoneware specialties. No successor to Mr. Harris at Paden City has been named.

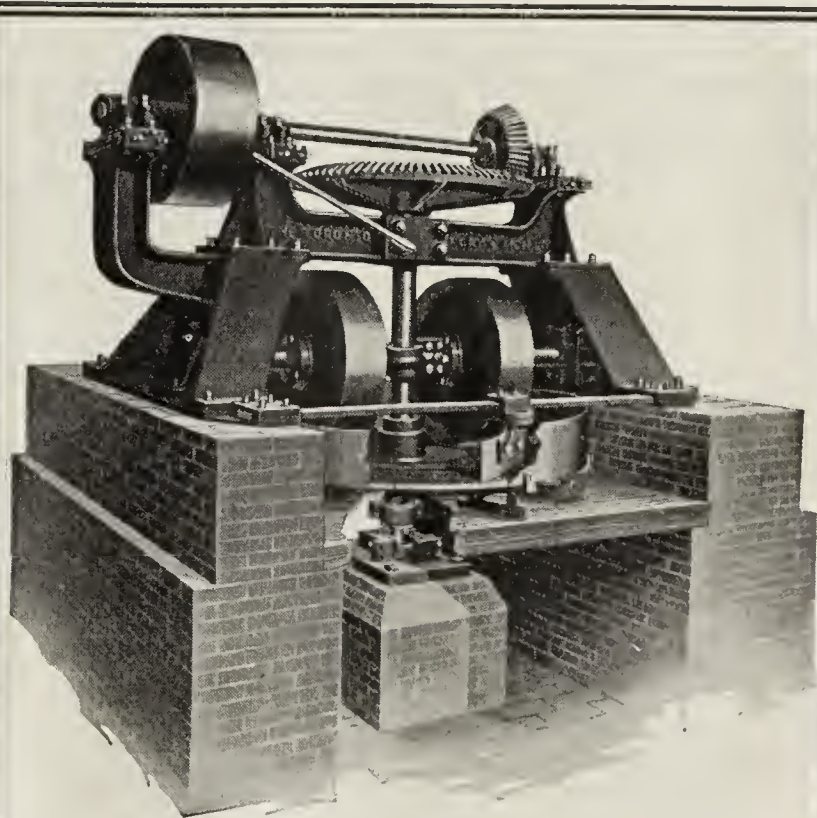
WILL BUILD THREE NEW KILNS

The Gadsden (Ala.) Clay Products Co. is planning for the construction of a number of plant additions for increased capacity in the manufacture of face brick. A battery of three new kilns will be constructed, and work is now under way on a new down-draft kiln at the plant.

MUSCLE SHOALS MEANS BUSINESS FOR CLAY MEN

Birmingham, Ala., brick and clay products manufacturers predict that, in the event Henry Ford succeeds in getting from the government the Muscle Shoals project, they will be unable to supply brick and clay pipes in sufficient quantities to meet the demands of Florence, Sheffield and Tus-

2828 Smallman St. Pittsburgh, Pa.



Type B, 9 and 10 Foot Dry Pan

TORONTO GRINDING PANS ARE BUILT TO GRIND CLAY

The people who are using our pans tell us that they can't be surpassed for daily production.

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on your requirements.

Toronto Foundry & Machine Co.
Toronto, Ohio

cumbia, all of which are located near the shoals. With the starting of work at Muscle Shoals a number of business blocks and residences would be built immediately. The brick necessarily would be shipped there from Birmingham, as that is the nearest manufacturing point. Muscle Shoals is only a little over 100 miles from Birmingham and on a direct line of the railroad.

CHIMNEY COMPANY RESUMES WORK

Following improvements at the plant of the Alphons Custodis Chimney Construction Co. at Ragland, Ala., operations have been resumed and the plant, which was idle for several weeks, is expected to be going at full capacity within the next few weeks. Vitrified brick, building brick and hollow tile are manufactured at this plant, which has been in successful operation for several years.

BIRMINGHAM PLANTS FAIRLY BUSY

Nearly all of the brick factories of the Birmingham, Ala., district are being operated from one-half to full time, and the products, both paving and common brick, are finding a ready market both at home and in a number of other southern states. Several large buildings in the course of construction are using many million brick. A good many building and paving brick are being shipped to the states of Georgia, Mississippi and Florida. Sewer pipe and drain tile are moving at a fairly active rate.

BUSINESS SHOWS SIGNS OF LIFE

Business, which had been considerably on the down grade heretofore, is beginning to back up and turn around ready to start the upward climb, according to W. C. Pratt of the Rector (Ark.) Brick & Tile Co. Mr. Pratt has recently suffered a severe loss in the death of his wife, his companion for 25 years.

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The Palmer (Mass.) Foundry Co. recently began the manufacture of tile pipe.

CALIFORNIA CONCERN INCORPORATES

Articles of incorporation of the S. P. Brick & Tile Co. have been filed. The company is incorporated to do a general business with its principal place of business at Fresno, Cal. Capital stock is \$250,000. The directors are: H. W. Shields, Fresno; W. D. Trewhitt, Hanford, and L. E. Hays, Exeter.

FILES APPLICATION FOR DISSOLUTION

The Coleman Brick & Lime Co. of Santa Barbara, Cal., is seeking a decree of dissolution from the superior court. Application was filed recently with the county clerk. The company has a capital stock of \$25,000 and the original owners and directors were Magnus Johnson, W. R. Coleman, J. E. Coleman, O. E. Miller, president, and D. O. Kelley, secretary. Two of the owners, Magnus Johnson and D. O. Kelley, have died since the company was formed and the stock has been purchased by the remaining three.

CONTINUOUS ACTIVITY IN CONSTRUCTION VITAL

According to a report prepared recently by the Los Angeles (Cal.) Pressed Brick Co. fully a half billion dollars lost in wages in the American building industry could have been saved had the conditions of labor and building practices which prevail in Los Angeles been generally paralleled. This report is being summarized for the information of the American Engineering Council, which recently met at Washington, D. C.,



LABOR SAVING **MACHINERY**



Adel Excavator

The Continuous Planer

The right machine and the correct method for excavating hard shale, chalk rock and other materials not of a soft, sticky nature. The fine cut taken by the machine thru the different strata and around a large arc gives a thoroughly mixed product which requires minimum crushing and processing.

This machine runs into the shale bank, cutting a swath 54 feet wide and from 40 to 60 feet high. Swinging thru a wide angle the excavator is steadily progressed, making a light cut thru the different strata, yet with such rapidity that the capacity ranges between 50 and 75 tons per hour, according to the material.

S

STEPHENS-ADAMSON MFG. Co.
AURORA. ILLINOIS

A

at the instance of Secretary of Commerce Hoover. The building industry, according to this investigation, received a heavy financial setback as the result of irregular employment, inefficient management and wasteful labor regulations. The situation in Los Angeles, it is pointed out, was practically free from these conditions, and was notably relieved of such economic waste as wage losses in any considerable amount. This was due to the regularity of employment in the building industry and the absence of restrictive labor regulations.

REPAVING STREETS WITH BRICK

The city of San Francisco has been tearing up the old basalt blocks which have been used for many years on some of the old hillside streets, and has replaced them with vertical fiber paving brick, much to the satisfaction of automobile drivers who prefer an even, non-skid surface. The vertical fiber paving brick for the months of November and December will be furnished by the California Brick Co., San Francisco, while the California Pottery Co. has the contract for supplying the city with vitrified sewer pipe.

INDUSTRIAL FAIR SHOWS OFF CLAY PRODUCTS

One of the most interesting displays at the San Francisco Industrial Exhibit was that presented by the California Brick Co. and the Livermore Fire Brick Works. It consisted of a miniature house, a model of good construction without a roof—so that the public might see just how the walls were made. It was made of Dickey mastertile and illustrated the strength, permanence, comfort and resistance to fire of this tile for all sorts of buildings, dwelling houses, garages, stores, office buildings and warehouses. N. A. Dickey, president of the forenamed firms, is of the opinion that hollow building tile is the coming construction material in northern-central California. Because of its convenience and safety it has come into remarkable favor during the past four or five years. An outstanding fact in favor of hollow building tile is the extreme dryness of the climate which makes fire hazards extremely imminent.

Another exhibit of interest at the Industries Fair was the handsome display made by the new Homer Knowles Pottery plant of Santa Clara. Because of the newness of this industry the exhibit attracted a great deal of interest. The Homer Knowles plant has been admitted to membership in the United States Potters' Association, and is said to be the only pottery member of this association west of the Michigan state line.

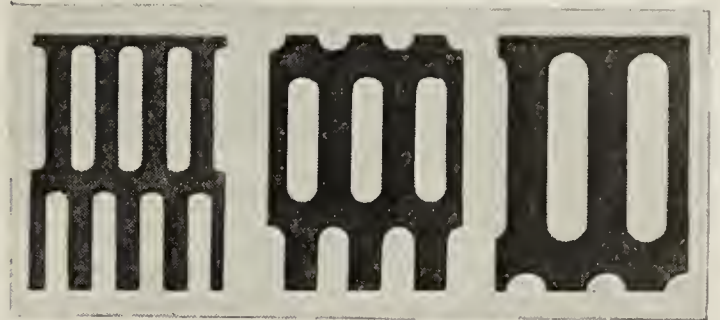
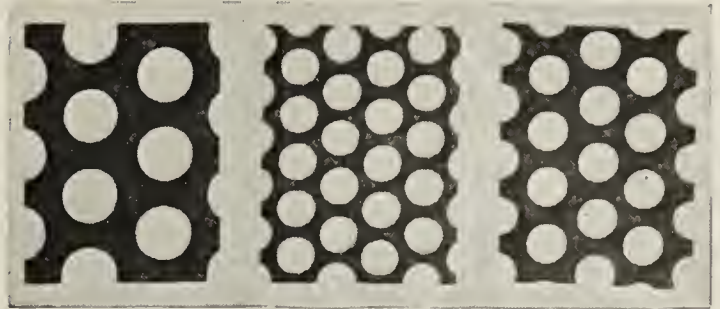
PLANNING TO INCREASE CAPACITY EIGHT TIMES

A large eastern concern which operates factories thruout the country has recently bought the Boulder (Col.) Pressed Brick Co. plant, formerly owned by Mrs. E. J. Lesser. The new owners are planning to increase the capacity of the plant from 18,000 brick daily to at least 150,000, and have good prospects for disposing of the larger production. A bid on the brick for 15 houses to be built in Boulder shortly, has been asked from W. M. Lane, foreman at the plant.

FIRE WREAKS \$200,000 DAMAGE

Damage estimated at \$200,000 resulted from a fire which burned the plant of the Donnelly Brick Co., at Kensington, Conn., on October 16. The fire started in the gas plant and spread with great rapidity, firemen who sought to check it being handicapped by lack of water. A 500-foot shed in which finished brick was stored, together with four brick-laden freight cars, was consumed. The engine room and a mill building were saved, as was also most of the brick manufacturing ap-

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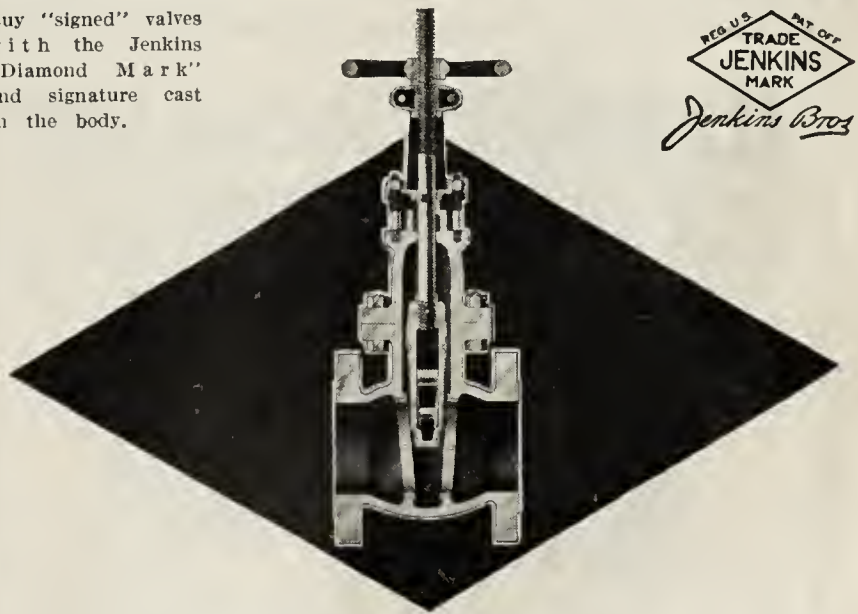
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NEW YORK OFFICE: 114 Liberty St.

Buy "signed" valves with the Jenkins "Diamond Mark" and signature cast on the body.



Jenkins Standard Iron Body Gate Valves



Fig. 331

Figure 331—Iron body, composition mounted, outside screw and yoke. Sizes 2 to 16 inches, suitable for 125 pounds steam and 175 pounds water. Sizes 18 to 30 inches for 100 pounds steam and 125 pounds water.

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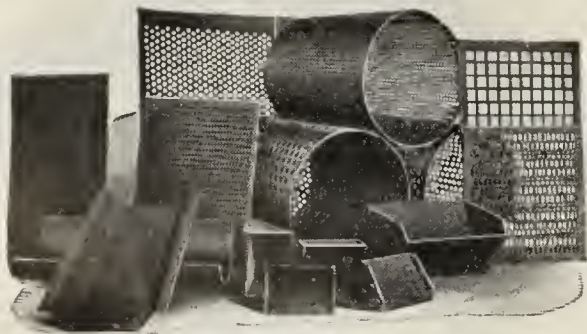
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GENERAL SHEET and
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LIGHT AND HEAVY STEEL
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paratus, but most of the other buildings at the plant were burned. Some papers and furniture were taken out of the office before the flames reached that building.

The plant had been in operation only a few months. Its construction was begun last October and it was opened in April of this year. M. Henry Donnelly was general manager and a number of New Britain, Conn., men were interested in the company. The plant was equipped with the American-Dressler tunnel kiln of the railroad type and according to officials had been doing a big business. Mr. Donnelly in estimating the loss at upwards of \$200,000, added that it was for the most part covered by insurance. More than 100,000 brick were rendered unfit for market as a result of the water striking them while hot.

FLORIDA DEALER TAKES ON CLAY PRODUCTS

The Jones Lumber Co., of Jacksonville, Fla., has added a new department which includes a general line of building materials, brick, lime, cement, flue lining, fire brick, fire clay, terra cotta pipe, and so forth.

PUSH BUILDING TO RELIEVE UNEMPLOYMENT

In order to provide ways and means for relieving the unemployment situation in Georgia members of the Atlanta Builders' Exchange were called into conference with Governor Hardwick November 12 and pledged their support to a plan asking the public for cooperation in a general building program. Charles Bernhardt, president of the National Association of Builders' Exchanges, was present at the conference and explained the efforts of the national body to increase building as a means of relieving the unemployment situation.

GEORGIA BRICK INDUSTRY THREATENED

That the common brick business in Georgia has, for several months past, been in as poor condition as in any state in the union, was the opinion expressed in a recent interview by a prominent brick manufacturer of Atlanta, who added that the industry in Georgia stood badly in need of a "Moses" to lead it out of the "wilderness." The name of this gentleman for obvious reasons is withheld from publication.

Where overhead and depreciation are considered, common brick is being sold in Georgia, this manufacturer stated, at less than the cost of production. The cause for this is over-expansion in the industry which has resulted in over-production, and the only hope the industry has to get on a stable basis again is for some outstanding man of the industry to take the initiative.

Face brick sales thruout the South have been satisfactory for several months past in the larger centers, but in the rural districts except for institutions have been close to zero. The prospects for new business, however, in both the large and small cities is many times brighter than it was at this time a year ago.

Price declines have been tremendous, in some cases prices having declined in Georgia 400 to 500 per cent. as compared with the peak prices, tho the latter, of course, did not represent the average. The shortage of power caused by the long dry spell is still causing curtailment at many of the manufacturing plants, tho the brick industry is not as seriously affected as some of the other industries.

Freight rates in the southeast on brick are in such sharp competition with lumber that if the request of the carriers for their mileage scale rates on brick as well as their desire for uniformity of standardization is granted, it will virtually result in the confiscation of the brick business. Hearings were in progress in Atlanta before the Georgia Railroad Commission thruout November on the petition of the rail-

roads for an upward revision of freight rates. Hearings on brick and clay products came up November 17, at which time considerable testimony was introduced by the brick interests of the state, represented by the Georgia Brick Manufacturers Association, tending to show that an increase in freight rates, which are already regarded as excessive, will virtually serve to ruin many industries.

The Georgia hearing was only the first of several similar hearings to be held not only in the South and Southeast, but thruout the entire country, and its outcome therefore is of vital importance to not only the brick industry, but many of the other industries which will be affected if the commission allows increased rates. Substantially the same evidence will be presented to other railroad commissions in the Southeast by the railroads as was presented at the Georgia hearing this month.

To cite a specific case of what increased freight rates will mean to brick manufacturers and dealers, the B. Mifflin Hood Co. prior to the war paid a rate of two cents per hundred; the present rate is five cents per hundred, and the carriers seek an increase to nine cents, or almost 100 per cent. Such an increase, according to leading manufacturers, would be almost ruinous to the industry.

INDIANAPOLIS HAS INDUSTRIAL EXPOSITION

The Industrial Exposition held in Indianapolis recently under the auspices of the Manufacturers' Committee of the Indianapolis Chamber of Commerce was very successful. Among the exhibits of interest to clay manufacturers were the displays of clay machinery. It has been estimated that approximately 200,000 persons saw the exhibit.

GETS LARGE SCHOOL CONTRACT

The Brazil (Ind.) Clay Products Co. has been awarded the contract for exterior and interior brick for the new Lincoln high school at Terre Haute, Ind. The school building is one of the largest to be built there this year and the contract was awarded on the prices accepted of \$22 per thousand on exterior brick and \$25 per thousand on interior brick.

IOWA COMPANY MAINTAINS FULL PRODUCTION

The plant of the Knox Clay Products Co. in North Knoxville, Ia., has been running at capacity for some weeks with 30 men employed, and this activity will be continued unless a railroad strike ties up business. This company is turning out by the thousands a high quality of tile building block and drain tile, said to be equal to that made from the famous Illinois clay beds, is also manufactured in large numbers. Shipments are now being made to practically every part of the state.

LOUISVILLE PLANT SHUTS DOWN

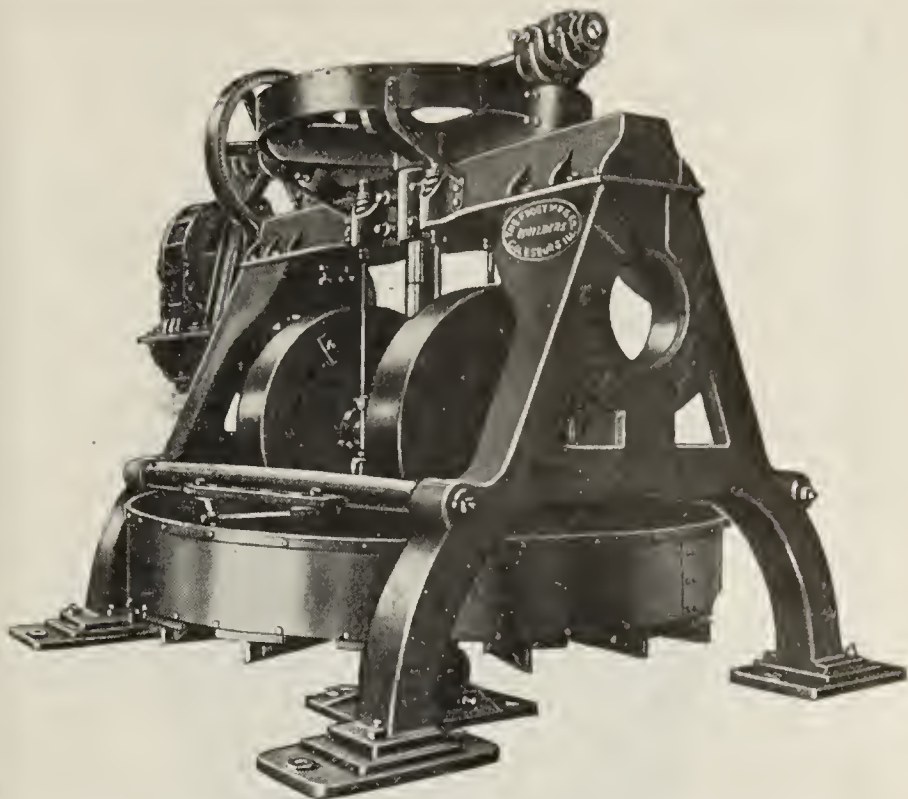
The Southern Brick & Tile Co., at Louisville, Ky., has accumulated fair stocks of brick and tile, and has stopped making brick for the time being at least.

TO SPEND \$85,000 ON IMPROVEMENTS

Extensions to cost in the neighborhood of \$85,000 will soon be started at the plant of the Big Savage Brick Co., Frostburg, Md., in addition to the erection of a new dryer, which latter work has already been begun. D. A. Benson is manager of the company.

BRICK MEN ERECTING APARTMENT BUILDING

Maurice and Joseph Lynch, proprietors of the Hampshire Brick Co. of Holyoke, Mass., have completed plans for the erection of an apartment block with 20 suites to be located



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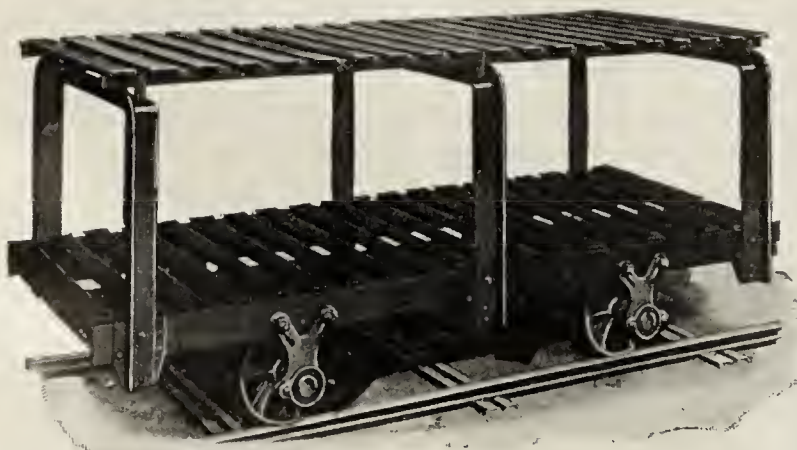
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Kiln Bands Carried in Stock**

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in the Highlands section of Holyoke. Work will be started in the spring.

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The plant of the Livermore (Cal.) Fire Brick Works has closed down temporarily.

REFRATORIES COMPANY ORGANIZES FOR \$600,000

The Keystone Refractories Co., Minneapolis, Minn., has been incorporated with a capital of \$600,000 under Delaware laws, to manufacture fire brick and other refractory products. The incorporators are H. B. Finch, W. K. Nash and C. R. Wilson, Minneapolis. The company is represented by the Delaware Registration Trust Co., 900 Market Street, Wilmington, Del.

BUSINESS SHOWING MUCH IMPROVEMENT

The Wellsville (Mo.) Fire Brick Co. recently added 25 men to its force at the local plant and now almost 100 men are employed and it is the belief of the management that it will be running at full capacity soon, as an appreciable improvement in the number of orders received has been noted. Manager G. E. Kiger reports that business has been picking up gradually for the past two months and that he believes the depression that hit the trade is over. An average of ten car loads have been sent out during the past several weeks, but this will be increased now as the force is enlarged and the business conditions improve. When the plant is running at full capacity 130 men are employed. For several weeks the mines of the company were closed and only loaders and molders were employed.

INSTALLS NEW TYPE MOLDING MACHINE

The factory of the Fulton (Mo.) Fire Brick Co. is running four and five days a week and is selling its products almost as fast as it is manufactured. Everything points to the management being able to continue operations at the present capacity, Manager C. O. McNamee has announced. The plant has been operating four days one week and then five days the next, he said. A new molding machine is being tried out at the factory. It has been in use about two months, but its use is still considered experimental. If it finally proves serviceable it will enable the factory to produce some of its products at a considerable saving. A. F. Becker, a mechanical engineer employed by the American Arch Co., which owns a controlling interest in the factory, has been at the plant for two months, studying the conditions, with a view to increasing the efficiency of the factory. A few changes in the equipment and arrangement have been made under his direction and others are in contemplation. Nothing of a large consequence will be undertaken for some time.

MANUFACTURING 20,000,000 BRICK PER YEAR

From common building and sidewalk brick to the manufacture of five different kinds each of face brick and hollow tile is the progress made by Polenske Bros., Shellak & Co., Hastings, Neb., since 1887. Two brick plants are operated, turning out 20,000,000 brick per year. Clay for manufacturing face brick is brought from Table Rock and Steele City, and this clay is mixed with clay found near the plant for making common brick. Brick are now being shipped to seven states in the middle and northwestern United States, and the makers are finding an ever widening field for their product.

BRICK COMPANY ORGANIZED

The Woodstown (N. J.) Pressed Brick Co. has been organized under state laws, to manufacture face brick and other

high-grade burned clay products. The company is represented by the New Jersey Corporation Guaranty & Trust Co., 419 Market Street, Camden, N. J.

CHAMBER OF COMMERCE TO START CLAY PLANT

The Chamber of Commerce, Burlington, N. C., J. V. Mann, secretary, is developing plans for the establishment of a local plant for the manufacture of terra cotta, drain tile and affiliated burned clay products.

WORKERS REFUSE CUT—PLANTS SHUT DOWN

175 employes of the Clay-craft Mining & Brick Co. and Iron-clay Brick Co., of Shawnee, Ohio, refused to accept a reduction of 15 and 20 per cent. in their wages, and as a consequence both these plants have suspended operations. They have a capacity of 100,000 daily.

4 CONCERNS FORM AKRON BRICK EXCHANGE

Four of the largest brick companies of Akron, Ohio, have formed the Akron Brick Exchange under the proprietorship of Walter Akers. They are the Duro Brick Co., L. W. Camp Co., Windsor Brick Co. and the Colonial Brick Co. Their combined output is estimated at 3,000,000 brick a month.

IDEAL COMPANY INSTALLS COST SYSTEM

G. W. Hafner, of G. W. Hafner, Inc., is installing the Building Supply News cost accounting system for the Ideal Products Co., Cleveland, Ohio. The Ideal is one of the first to adopt the system following the unanimous approval of the methods by the Builders' Supply Board of Cleveland a few weeks ago.

FRANKLIN SHUTS DOWN FOR REPAIRS

The new plant of the Franklin Brick & Tile Co., located at Taylors Station, east of Columbus, Ohio, which has been shut down for some time, will probably be started after January 1. A number of necessary repairs are being made to put the plant in first class condition. The plant will manufacture face brick and building tile.

OPERATING AT CAPACITY

The plant of the Straitsville Impervious Brick Co., located near New Straitsville, Ohio, is in full operation. This plant makes gray shades largely and reports show that there is a fairly good demand for those shades. The plant is operated by the Thomas Moulding Co., which maintains an office in Columbus in charge of John Cooper. Mr. Cooper reports a fair demand for the product of the plant.

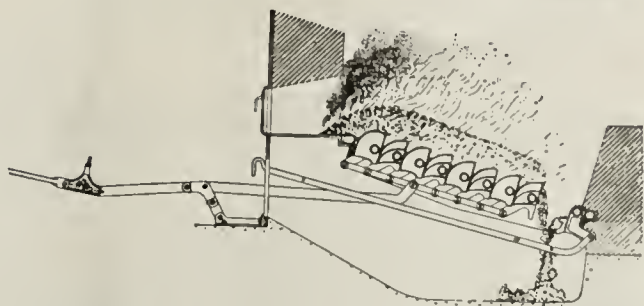
DECIDE FOR STONE IN FAVOR OF BRICK

The changing of the specifications on two of the projected high school buildings of Columbus, Ohio, from brick to stone was announced in brick circles in Columbus during the past week. Brick men are trying to have the specifications changed to include brick and have some hopes of success. But nevertheless there will be a good demand for interior brick, many of which will be salt glazed brick.

MANY HOCKING VALLEY PLANTS CLOSED

A large majority of the face brick and other clay products plants in the Hocking Valley district are closed down at this time. The three plants at Shawnee, operated by the Ironclay Brick Co., the Claycraft Brick Co., and the Central Refractories Co., are all closed. The Ironclay and Claycraft

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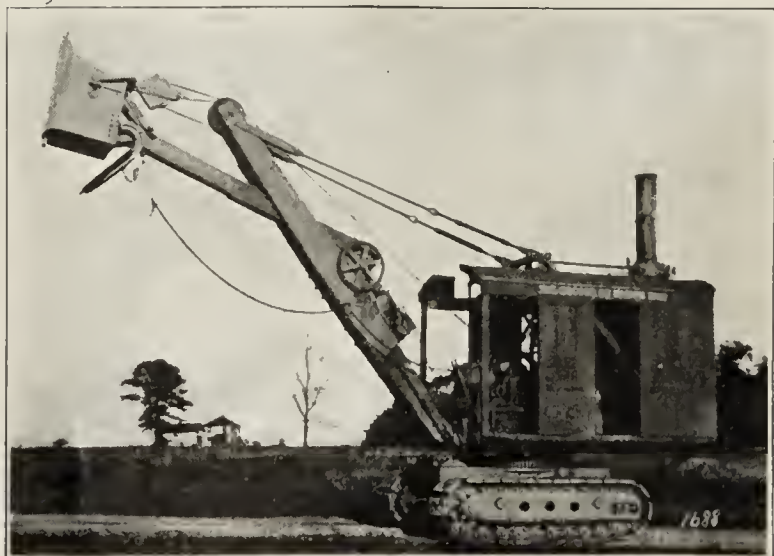
Let us send a representative engineer to your plant with a working model. It will not obligate you to look it over. Write us anyway.

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Louisville - - - Ohio

plants were closed because of a dispute over wages. Both concerns asked for a lower wage scale which the men refused. The plant of the Belden Brick Co., at Somerset, is also down because of labor troubles. All of the plants of the Nelsonville Brick Co., at Nelsonville, including that of the Ohio Fireproofing Co., are closed down. The plant of the Hocking Valley Brick Co., at Logan is now in operation as is the plant of the Hocking Valley Products Co., at Greendale. The latter plant was placed in operation just recently.

ADVOCATES BUILDING OF THRU ROUTES

State Highway Commissioner Leon C. Herrick has issued a statement in which he defends his position that the construction of thru routes is the only plan for the protection of taxpayers against excessive maintenance costs. He claims that since railroad building has been stopped the highways are called upon to take care of a portion of the burden of transportation and that hard surfaced roads are in many cases the only style of construction that does not mean a heavy outlay for maintenance. For the main routes the construction should be either brick or concrete.

MUNICIPAL ACTION TO STIMULATE BUILDING

The Cleveland, Ohio, mayor's unemployment conference has planned to stimulate building, with a view toward eliminating obstacles first, in the appointment of a committee from its membership of 50. The committee will comprise individuals not connected with the building industry in any way. Its purpose will be to reveal the true conditions applying to material, labor and other factors entering into construction, and inspire confidence in the business for the building public. Its aim will be to have building continue on a normal scale thru the winter, or at least develop it to a still greater degree not later than March 1.

START BUILDING NEW BRICK PLANT

Excavation has been started at Sugar Creek, Ohio, for a new brick plant of which Edward Shepfer and Moomaw Brothers are the promoters.

FIRE DESTROYS FREEPORT PLANT

According to information received, the Freeport plant of the Freeport (Pa.) Brick Co. has been totally destroyed by fire. It is not known what the plans of the company regarding rebuilding of the plant are.

PLANNING EXTENSIONS TO PLANT

Twenty-seven brick kilns have been fired and operations have been resumed at the plant of the Dando Brick Co., at Merrill Dam, Pa., near Beaver. Officials of the company have made plans for the extension of the plant.

TO BUILD TWO-STORY ADDITION

Plans have been perfected for the erection of a two-story factory, 57x185 feet, at the plant of Dittmar Brothers, 618 Day Street, Williamsport, Pa., manufacturers of composition tile and other clay products. The new building will cost about \$40,000.

HARBISON-WALKER DECLARES DIVIDEND

The Harbison-Walker Refractories Co., Pittsburgh, Pa., has declared a quarterly dividend of 1½ per cent. on the preferred stock of the company, payable January 20, 1922. A similar dividend has been declared on the common stock, payable December 1, 1921. F. R. Hilleman is secretary.

TO REBUILD TILE PLANT

The National Fireproofing Co., Fulton Building, Pittsburgh, Pa., has plans under way for the rebuilding of the portion of its plant at East Palestine, Ohio, recently destroyed by fire. The work will consist of a number of buildings with main structure one story, about 100x100 feet. The estimated cost is placed at about \$60,000. Sidney F. Heckert, Bessemer Building, Pittsburgh, is architect for the work.



The Standard Brick Co., Hindman Ferry Road, Memphis, Tenn., is manufacturing a line of Colonial Red, Brown Matt and common brick.

PLANNING INCREASED CAPACITY

The Cities Brick Co., Chattanooga, Tenn., has preliminary plans under way for the erection of additions to its plant on Curtain Pole Road. It is proposed to provide for extensive increase in capacity. C. D. Patterson is general manager in charge.

HANDLING HIGH CLASS LINES

J. J. Bishop, of the Memphis (Tenn.) Brick Supply Co., reports November activities good. The company's brick displays in the Goodwyn Institute are complete and varied. The Hydraulic Press Brick Co. line from St. Louis, the Verdigris Vitrified Brick Co. line of Neodesha and the Northwestern Terra Cotta Co. goods from Chicago are shown.

CARRIES BEAUTIFUL DISPLAY

The Fischer Lime & Cement Co., Memphis, Tenn., in their new addition show a beautiful display of fancy pressed brick products, tile and so forth; mantels, wall displays, benches and floors are shown in a large space. A dining room for employes on the same floor, and a warehouse complete in fireproof products, sewer pipe and so forth are other features. W. W. Fischer states that the Fischer-Herbert Brick Co.'s plant in South Memphis is active now in the manufacture of common mud brick with a good daily capacity.

WHEELING WILL BUILD \$12,000 ADDITION

A \$12,000 brick building is soon to be erected by the Wheeling (W. Va.) Tile Co. to be used for storage and partly for the work of the company.

BUILDING BRICK PLANT

Caledon Brick Co., Imperial Bank Bldg., Queen and Yonge Sts., Toronto, are constructing a brick plant.

SOME NEW CANADIAN CERAMIC PRODUCTS

It was not known until about a year ago that nature had deposited an enormous quantity of Infusorial earth near the city of Swift Current, Saskatchewan, Can., and it remained for the Van-Kel Chemical Co., Ltd., of that city, to bring it to light. After very severe tests by the Bureau of Labor and Industries of the Saskatchewan Government in conjunction with the Ceramic Department of the Saskatchewan University, the firm has started upon the manufacture of a large line of cleansing and abrasive products.

In addition, the Van-Kel company has perfected from the above raw material, a novel fire lighter, made in the form of a miniature brick that, when burned, remains quite porous, so that by immersing in kerosene the latter is absorbed rapidly.

The firm has a very complete plant at present, but with the rapidly increasing demands for their products, they now find it necessary to figure on installing more grinding machinery. Dry pan and disintegrator firms are asked to send catalogs.

The One Man Digger



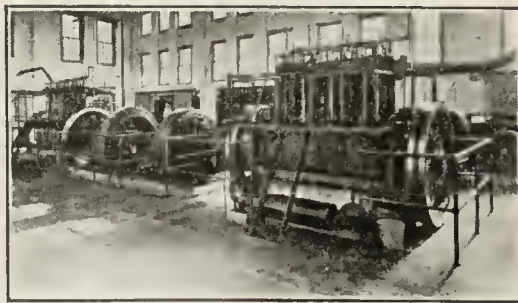
is cutting clay costs for many operators.

Light, economical, self-propelling. Track or caterpillar type mounting, gasoline or electric power. One man and the Bay City Digger will displace a dozen men. Always ready — rain or shine. The low price and operating cost enables the small operator to install this labor saving machine.

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Hope Engineering & Supply Co.

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THE BUILDING SITUATION

(Continued from page 817)

small homes was reflected in the figures. Iron and steel articles of the sort used in larger buildings fell off heavily. Comparative figures for receipts in September, 1920 and 1921 are as follows: Receipts—Brick, building tile, etc., 1920, 201 cars; 1921, 260; iron and steel articles, 1920, 584; 1921, 343; lumber and forest products, 1920, 1,176; 1921, 974; building and roofing paper, 1920, 53; 1921, 48; sash, door and blinds, 1920, 14; 1921, 49; stone granite and marble, 1920, 124; 1921, 211; cement, lime and plaster, 1920, 387; 1921, 373; linseed oil shipments in September were 173 cars, compared with 156 in September of last year.

Louisville—Prices Firm

General demand is a bit quiet just now as the late season is resulting in a slowing down of building to some extent. However, deliveries are fair on work that has been started. The year as a whole will close as a good one, and general prospects are for a very fair volume of spring business. Some of the brick men have complained about business this year, but as a whole the trade has been very well satisfied.

There has been discussion of lower prices for brick during the winter season to encourage winter building, but it is felt that such lowering of prices would not materially increase building operations, and that it would be hard to advance prices again in the spring. Prices have been firm for some time past, and the general opinion is that they will remain unchanged for the next few weeks.

Memphis Outlook Excellent

The outlook for brick construction work in Memphis, Tenn., and vicinity for the next 12 months is excellent, said a prominent brick dealer talking to the Brick and Clay Record's correspondent. Numerous large structures have been built in 1921, but it looks as if the big work remains over for 1922. Financial and general business conditions are getting back to normal, improved labor conditions warrant optimism for 1922, is the impression gathered on all sides in the South.

Birmingham Clay Products in Good Demand

The tendency of the brick and clay products market in Birmingham, Ala., is slightly upward, with the demand somewhat on the increase. Most of the brick plants are operating from 50 to 100 per cent. normal, and there is a good demand for both building brick and paving brick.

The majority of the buildings being erected are small brick business blocks and small residences. During the past week permits were issued for two new churches and a store, at a total cost of \$49,800. These three buildings are to be erected of brick.

The city commissioners have not as yet settled on the plans for the building of the \$300,000 city auditorium. Work is progressing nicely on a number of large city school buildings, a new home for the Birmingham Trust & Savings Co., the Masonic Temple and a \$100,000 hotel. The hotel and the school building are being erected entirely of brick, and these buildings alone are taking almost the entire output of several brick concerns.

Contractors generally are optimistic, and are predicting that the year 1922 will witness one of the biggest building programs Birmingham has seen in a number of years. There is a shortage here of both business houses and residences.

The San Francisco Situation

In the matter of building dwelling houses it is asserted that many people of the bay district and San Francisco, Cal., are withholding building operations on account of the retained high cost of materials and wages. The wage board of San Fran-

cisco has been in session recently discussing the building situation, but at last report no definite decision had been reached because representatives of the workers placed the blame upon manufacturers and jobbers, and vice versa. It is believed that failure of railroads to reduce freight rates on brick and high wages have held back the brick industry in the west. Brick, building blocks and tile unquestionably form the best and most permanent materials for building purposes in semi-arid districts, but the high prices mitigate against their use in the present construction era. The more houses built of brick and tile, the lower will be the fire insurance rates in any community. Since freight rates by water have been reduced to a considerable degree it is expected that rail rates will follow suit and that this will improve the situation on the Pacific Coast.

* * *

CHICAGO PERMANENT BUILDING SHOW PROSPERS

Chicago's New Permanent Building Material Exposition is speedily adding to its initial reputation, and developing features that deserve the study and emulation of every city in the country.

One of its latest achievements, was the carrying out of a notable series of lectures on home architecture, decoration and landscaping, in a specially constructed auditorium of the Exhibit.

There were three speakers, each of whom is a nationally known expert and designer, Ross Crane, head of the extension department of the Chicago Art Institute, who spoke on home decoration and design, F. A. Cushing Smith, who discussed landscaping, and Miss Evelyn D. Hansen, who spoke on dress.

"While most of the members on our committee have been accustomed to dealing with larger architectural problems than that of the small house," said F. E. Davidson, president of the Illinois Society of Architects, and chairman of the committee, "we knew that Chicago tenants are going into the homebuilding game on a bigger scale than ever next spring.

"We felt that if we could create a demand for more artistic small houses than the average contractor puts up, give the prospective home owners a conception of the proper way to landscape their grounds, and show them how to avoid the most inartistic types of furniture, the community and the tenants would profit thereby.

"We were a little uncertain at first as to what the attendance would be, altho there was no admission charge, but the first day dispelled our fears."

On the second day, the audience was so great that men and women were standing in the side aisles. And the Question Box on Saturday drew the biggest crowd of all.

The lectures were heavily advertised and given splendid publicity in the Chicago Tribune, Chicago Herald-Examiner, the Chicago Daily News, the Chicago Evening Post and the Chicago Journal, the news stories running as long as a column apiece.

After each day's session, the audience scattered among the booths which are a permanent feature of the exhibit.

* * *

SEES MUCH CONSTRUCTION IN 1922

D. F. Crouch, of the B. Mifflin Hood Brick Co., Memphis, Tenn., has returned from a trip to all of the company's plants located at Birmingham, Ala., Atlanta, Ga., and Chattanooga, Tenn. Mr. Crouch stated that the outlook for building operations in the remaining months of the present year and for 1922 is very bright and that a great amount of new construction work is in sight over the southern territory.



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Manufacture of Roofing Tile, (English Edition)..	1.25
Manufacture of Roofing Tile (Worcester).....	.75
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CONTROL OF KILN TEMPERATURES

At the plant of the General Porcelain Co., Parkersburg, W. Va., a recently completed Harrop continuous tunnel kiln is being used to fire a general line of low tension electric insulators. Two bodies are being produced, requiring temperatures corresponding to cone 10 and cone 12 respectively. These are being fired in the tunnel kiln satisfactorily by either increasing or decreasing the temperature to suit the respective bodies, or, by increasing or decreasing the speed

refractory platform mounted on a heat insulating bed. These cars are moved thru the kiln by a hydraulic ram operated with oil from a single plunger pump driven by a variable speed motor of one-half horse power. Figure 1, a view of the charging end of the kiln, shows the cars loaded with ware ready for entry into the kiln, and also shows the hydraulic ram, which is the motive power of the cars in the kiln.

The control of the kiln temperatures, which is a very important factor in burning, is guided by Wilson-Maeulen

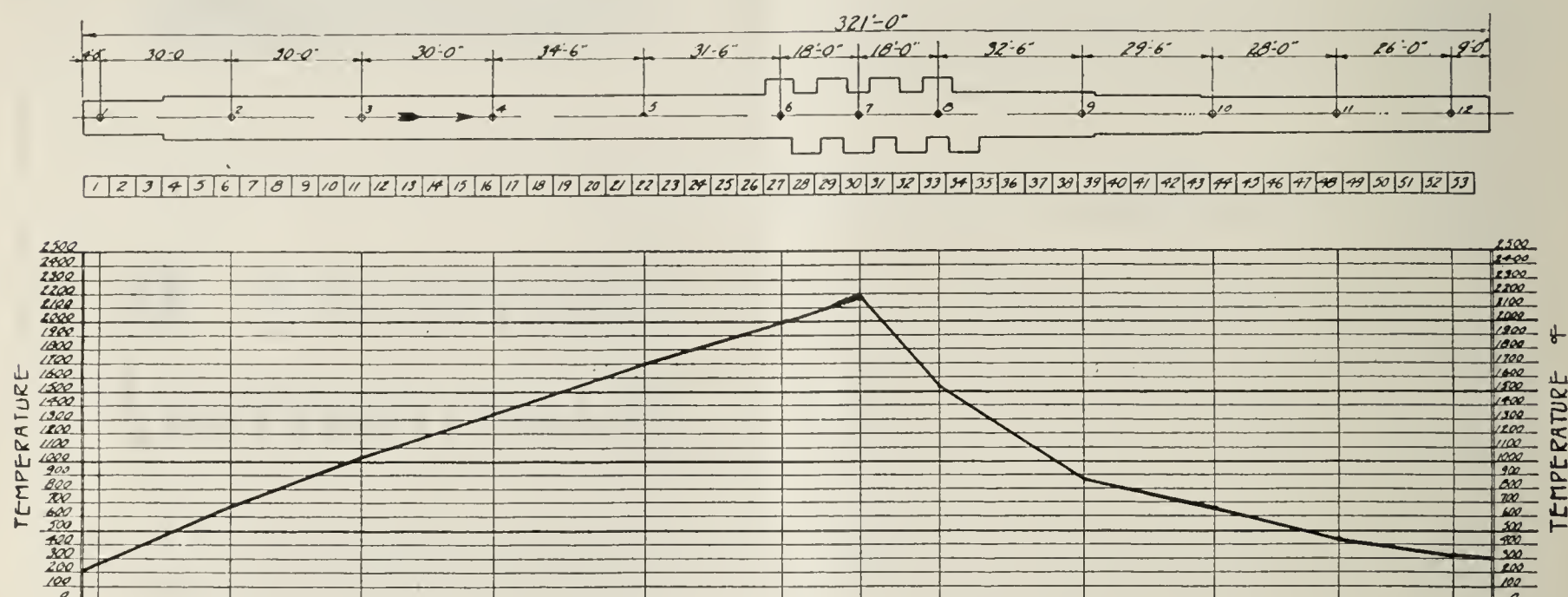


Figure 3—Kiln Diagram Showing Couple Locations and Temperature Plot

of the cars going through the kiln. Either of these methods have been used satisfactorily.

The kiln is of the direct fire type 321 ft. long and holds 52 cars. The inside width is 4 ft. 6½ ins., and the height from the car platform to the crown is 6 ft. 2⅛ ins. Four furnaces on each side of the kiln, each equipped for firing gas thru Maxon burners, supply the heat for the hot zone. Complete equipment for burning fuel oil is also at hand, and there are arrangements for changing to this fuel at a moment's notice at any time.

The cars which pass thru the kiln are cast iron with a

pyrometers, both indicator and the Tapalog. Base metal thermo-couples are used in eight locations in the kiln, and platinum-rhodium thermo-couples in four locations of highest temperature. All couples are compensated by extended cold junctions.

All the couples, both base metal and rare metal, are connected thru a dust and fume proof range selective rotary switch to a double range high resistive Monopivot indicator, from which readings of kiln temperatures are taken at regular intervals. At the same time, temperatures in the two locations of highest temperature are being continuously re-



Figure 1



Figure 2

ECONOMY vs. FIRST COST

You will be interested in a few words on this subject as it relates to the purchase of pyrometers.

The purchaser (particularly one buying pyrometers for the first time) is likely to pay too much attention to the price. To him a pyrometer is a pyrometer and if one costs less than another he is inclined to favor the cheap one.

There are many ways in which the first cost of pyrometers can be cut. Most of these involve a sacrifice of accuracy and dependability and make the equipment expensive to maintain.

ENGELHARD PYROMETERS

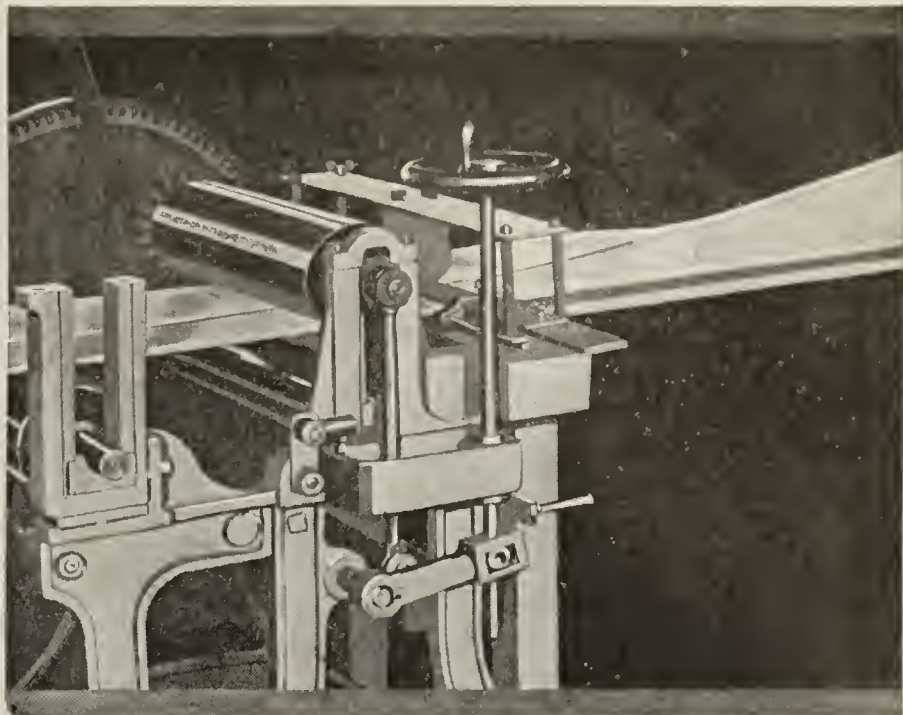
are built to a high standard. Pyrometer performance depends largely on details of construction most of which cannot be seen by the purchaser. These things count, and they cost money, but the experience of users has shown that they are worth more than they cost. Our pyrometers are good ones. They cost more to build but their price is only a little more. They repeatedly make records for low maintenance. On account of their economy over a period of years it may be truly said that

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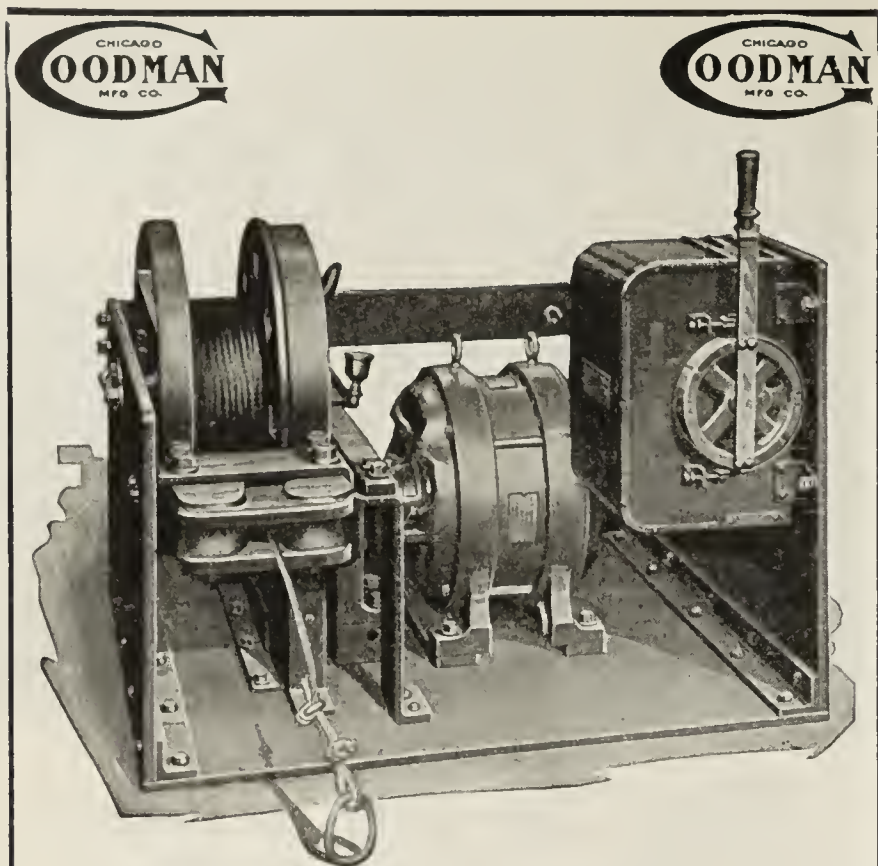


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(6)

corded by a two record Tapalog, so that the thread of kiln temperatures can be observed at all times by the operator, and a check on the work of the operator be maintained at all times for supervisory purposes.

In illustration figure two, there is shown at the right the double range indicator and double range rotary selective switch; and at the left, the two record multi-recording Tapalog, with strip chart which runs continuously for 30 days and shows the temperature record of two couples on the same chart, each record in a different color. One of the important features of this equipment is its dust proof design, embodying a rotary switch with completely enclosed contacts, a sealed in glass covered indicator and a rubber gasketed case with sealed in glass for the Tapalog.

At the top of the instrument board shown in figure two is a rack containing a number of small sliding blocks, each corresponding to a car in the kiln. These blocks have small hooks on which are hung tags showing the kind of ware held by the car corresponding to that block. These blocks are progressed thru the rack as the car itself progresses thru the kiln, so that position in the kiln and contents of any car can be readily determined at any moment.

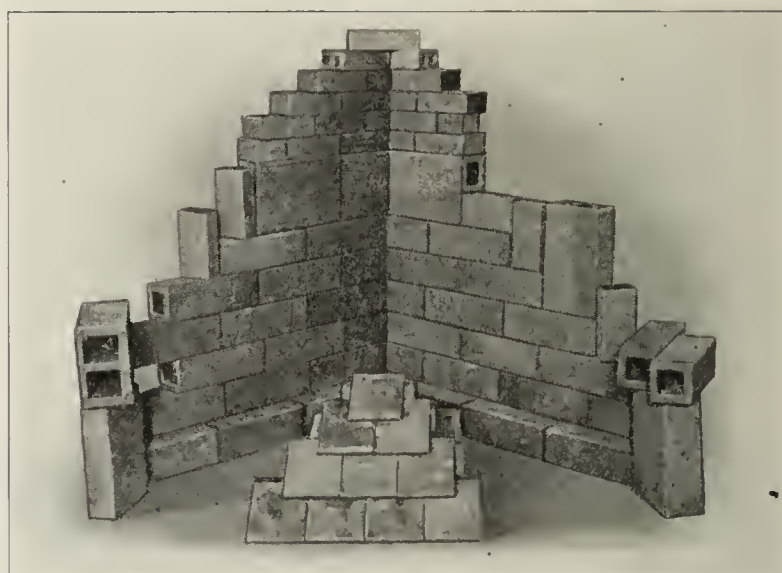
A diagram of the kiln, showing location of couples, and a temperature plot showing curve maintained for a 1½ hour car schedule at cone 12 is given in figure three. The cross lines on this temperature plot correspond to thermo-couple locations and the curve is the actual one on the date the record was taken.

The kiln was designed to produce the equivalent output of twelve 16½ ft. diameter round periodic kilns per week, at a one hour car schedule. At the present time a schedule of one and one-half hours is being maintained, due to the fact that the plant is not operating at full capacity. Four furnaces only are being fired (two on each side), which shows a saving over the periodic kiln operation. Increase of car schedule will of course increase the saving of fuel.



CUBAN CLAY PRODUCTS

The accompanying picture shows a lot of samples made from Cuban clay. The test was made in The Hadfield-Penfield Steel Co. clay testing department and demonstrates that there is good clay in Cuba. As will be seen in the picture the clay was suitable for a variety of products and each



Samples from Cuban Clay

product shown was of good quality. Cuba has a future and good clay products will help to make that future a creditable and permanent one. Our machinery will materially help to insure good clay products.—*"American Clay Magazine."*



The new and darker chocolate mortar color that has just been placed on the market by the Ricketson Mineral Paint Works, Milwaukee, seems to have caught the fancy of the trade generally. Sunderland Bros. Co., the largest building material house in Nebraska have just written in saying: "We have tried it out on our new marble plant and the contractor using this material pronounces it successful in every way. A large New England material concern has also written the Ricketson people saying that experiments with the new chocolate have proved entirely satisfactory.

BRICK and CLAY RECORD

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Mueller Machine Co.....	931
Mullins Body Corp.....	908

National Clay Products Ind. Assn.....	876
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Ohio Galvanizing & Manufacturing Co.....	929
Osgood Co.....	921

Peabody Coal Co.....	914
Philadelphia Drying Ma- chinery Co.....	865
Pittsburgh, Lisbon & Western R. R. Co.....	912
Potts & Co.....	933
Proctor & Schwartz.....	871
Pulsometer Steam Pump Co.	911

Ricketson Mineral Paint Works	911
Roessler & Hasslacher.....	913
Russell Eng. Co.....	918

Schaffer Eng. & Eq. Co.....	919
Schofield-Burkett Cons.....	933
Standard Conveyor Co.....	925
Steele & Sons.....	932
Stephens-Adamson Mfg. Co.	862
Stevenson Co.	916
Sturtevant Co., B. F.....	874
Sunbury Mfg. Co.....	921

Talcott, Inc.....	922
Thew Auto Shovel Co.....	873
Thwing Instrument Co.....	908
Toronto Foundry & Ma- chine Co.....	919
Trade Names.....	927

Watt Mining Car Wheel Co.	910
Whitcomb Co., Geo.....	929
Williams Patent Crusher & Pulverizer Co.....	930
Wilson-Maeulen Co.....	908

Zelnicker Supply Co., Walter A.....	942
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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To

decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

The Business Situation

GOVERNOR W. P. G. Harding, of the Federal Reserve Board, in an address before the United States Potters' Association last week, said:

"Our banking system is essentially strong, sound and the Federal Reserve Bank which holds the reserve of the member banks has a combined reserve of over 72 per cent. If you set aside their reserve deposits, member banks, have a reserve of over 99 per cent. With the Federal notes outstanding, and it is a peculiar fact, there are very few Federal notes or gold notes outstanding, a reserve of over 100 per cent., is maintained with gold reserve 99 per cent.

"There never has been as strong a banking situation as we have today. We are seeing evidences of cheaper money and easy credit and the market for Liberty Bonds has reached par. On the stock market in the prices of high grade securities issued by private corporations, advances are noticeable. All these things ought to speak well for the future, because the bond and stock market are very good indications of what is going to happen along business lines. Whenever there is a slump in the stock market you see that effect on the stocks and bonds long before the business begins to slump. Of course, on the contrary when there is a boom revealed in the stock market it is foreshadowed in the stocks before the actual revelation takes place in business.

"The Federal Reserve system has had demands on its ability to ward off a money panic. With a note issue power, I don't see how a money panic is possible, but don't be too optimistic. The ability to stave off the money panic doesn't mean that we can stop depressions.

"Economists tell us there are well defined cycles in business. A swing of the cycle to a point, then a somewhat broader swing, a changed cycle and the longer swing so that over a period of 50 years we have a general tendency toward advancing prices; a general swing to the other side, a declining of prices. The ordinary cycle in this country has been good times, very good times, higher prices, speculation. Then all of a sudden we have a sudden period of panic. Following the panic, drastic liquidation, stagnation, general depression. Following that we have a period of revival; then

back to good times again.

"Now the psychological time, the period of the panic a few years ago passed. That, I think, the Federal Reserve Bank prevented. The general financial condition, the liquidation and the depression have passed, just as they have in France and in England, and as we passed thru the panic period we passed thru the preliminary stages of the revival of good times. As soon as the Limitation of Armament Conference comes to agreement, and as soon as Europe announces the political conditions there, then we can look forward to changed economic lines, increased orders, business expansion will find note issues, commerce will expand accordingly, and in due course we will be back to good times again."

* * *

Magnifying Differences in Building Costs

ON ANOTHER PAGE of this issue is reproduced an advertisement inserted in a daily newspaper by the National Lumber Manufacturers' Association. The facts concerning home building were separated, weeded out and those features which were favorable to lumber emphasized in the copy.

Thus comparison is made with various types of wall construction. However, the comparison is made on enclosing walls only, which means that any difference in cost in the total cost of the house would be magnified when its unit comparison was made. Hence the apparently large percentage difference given in the advertisement is obtained because of this condition.

The idea of the advertisement is obviously to confuse the public and distort its view. It is, moreover, an admission on the part of the lumber manufacturers that competition is becoming keen, due to the daily diminishing difference between the costs of other types of construction and that of frame. The building contractor and the architect, however, will not be fooled by this propaganda, and we are inclined to believe that in the end this kind of advertising will react to the disadvantage of the lumber men.

The clay manufacturer might well point out in his community the misleading efforts on the part of the lumber men. It is a good opportunity to cash in on an unethical advertisement and a chance to gain some good publicity for

clay products. This opportunity should not be passed up.

* * *

Cost Finding and Standardization

AT THE CONVENTION of the United States Potters' Association, held in Washington last week, there was included in the Cost Committee's report some information that has bearing on two important phases of any manufacturing business. These relate to cost finding and to the multiplicity of styles of articles manufactured.

A progressive pottery concern has spent considerable money building a cost system which enables them to determine the cost of each item in each stage of manufacture. The records and statistics which are necessary in connection with the cost work are used for other purposes, and gives them immediate information which is valuable in their administrative work.

When they completed their first costs of whiteware in 1916, they encountered some rather startling figures. Of 259 articles upon which costs were computed, 192 were found to be profitable when sold at the prevailing discounts, the rate of profit ranging from 1 to 60 per cent., while the remaining 67 items showed a loss of from 1 to 89 per cent. on sales price. They, therefore, had an extreme range of 149 per cent. between the ranges of cost and selling price.

After five years of cost keeping work, they have ascertained the cost of each article made, and in new lists to the trade for the first time published list price based on exact cost. Comparison with former lists shows some items reduced and others advanced, but all on an equitable basis.

The above case is, firstly, an excellent graphic, practical proof of the value of a good cost keeping system. Just think! For many years the above concern was selling articles, some at a loss of as much as 89 per cent. However, this is not an infrequent experience among clay plants not equipped with a cost system.

Secondly, the value of standardization or simplification of styles of articles manufactured is certainly to be seen as a valuable lesson from this report. The elimination of excess varieties would simplify cost finding and keeping, facilitate factory work, and in numerous other ways improve manufacturing operations.

Innovational - - -

falls short as a descriptive word for the December 27 issue of BRICK AND CLAY RECORD. It will be the "Ace" of all issues.

HOW an OLD LINE PLANT WAS REHABILITATED WITHOUT a LOSS of a DAY'S OPERATION and ITS PRODUCTION COSTS CUT **SEVEN DOLLARS PER THOUSAND** is the lead story of this issue and is the greatest "break" in the clay products industry in years! It is the talk of the industry and the factory is the forerunner of a new standard of clay plants of this country.

Other articles are in preparation showing cost cutting features on other clay plants.

This issue will be featured as a cost cutting issue. It will also be a buyer's guide for you and you will want to keep it on permanent file since it will be a catalogue of suggestions and a "classic" on efficient production methods.

Months of preparation have been made to make the December 27 issue of BRICK AND CLAY RECORD the greatest value ever given to the clay products industry. Be sure to watch the mail for this issue.

You must cut your costs to allow closer competition with other manufacturers,—to widen your market against cheaper substitutes such as cement, lumber, et cetera,—to reduce prices so that buying will no longer be delayed. REMEMBER—

1922 Will Reward Those Who Have Reduced Their Costs!

A. F. B. A. Going Stronger Than Ever

Eben Rodgers Elected President—Meeting Enthusiastic, Anticipating an Excellent 1922—Important Business Accomplished—Dealers Meet Too

EMERGING FROM A YEAR of hard trials for trade associations, the American Face Brick Association displayed the pep and punch at its convention that is characteristic of this body, and which is indicative of a bright future for those concerns that are members of this association. While the face brick men have always shown an admirable spirit of progressiveness, this year's meeting was a real show-down for all of them and the membership stood the test. This was proven by the enthusiasm displayed at the various sessions, the approbation of the advertising campaign and the seconding of new measures to go into effect—activities which mean a great deal for each individual member.

This briefly sums up the successful tenth anniversary of the American Face Brick Association, which meeting took place at the Greenbrier Hotel, White Sulphur Springs, W. Va., on Wednesday, November 30, and Thursday and Friday, December 1 and 2.

There were present at this convention about 170 representatives of manufacturers and 30 dealers. Each session was well attended. The recesses were taken advantage of at every opportunity. Golf was very popular among the members, and those who did not play golf found delight in trailing the paths that lead into the enticing scenic mountains.

Urges Cooperation of Manufacturers

The opening session was called to order on Wednesday afternoon, on which occasion President Paul B. Belden delivered an address containing timely advice on association activity. The keynote of his message, which was quoted from King Solomon, says: "Where there is no vision, the people perish." It struck a responsive chord and was accepted as the need of the hour. Cooperative work among manufacturers was strongly emphasized as the measure which was urgently required for the future welfare of every face brick concern.

Considerable and well deserved praise for the personnel of the association staff was given by Mr. Belden in his address, which is published elsewhere in this issue.

The dynamic hub—the impelling force of the association, Secretary R. D. T. Hollowell, read his report which was in itself an answer to the question of any face brick manufacturer why he should belong to the A. F. B. A. Mr. Hollowell's report is reprinted below.

Secretary Hollowell's Report

"It would have been very appropriate had this meeting taken place last week, with Thanksgiving Day occupying a prominent position in the schedule. 1921, the *tenth* year of this association's successful existence, will probably go down in our history (and, parenthetically, this applies also to almost every other national trade organization) as one of the most trying and difficult years in which to attempt major accomplishments. The events of the past few months have *clearly* indicated, however, that both the face brick industry and the American Face Brick Association have safely turned the corner.

"Unable to comprehend the tremendous upheaval thru which all industry has been forced to go during the last 18 months, and utterly ignorant as to the great fundamental natural laws which were manhandling one industry after another, making for irregular deflation in costs and prices, the public's mind became inflamed against trade organizations in general, apparently no discrimination being shown between the old established and properly conducted associations as against those of the 'over night' variety, ignorantly, loosely and sometimes viciously operated.

"During the last four months we have seen some special evidences of the fact that both the industry and the association are on the way to better times. Beginning with August the shipments of our mem-



Robert W. Childs, Counsel for A. F. B. A.



Eben Rodgers, New President of the A. F. B. A.



R. D. T. Hollowell, Secretary, A. F. B. A.

Meet Me in St. Louis, Missouri; Meet Me at the C. B. M. A. Meeting

bers, upon which we base assessments, have shown a gratifying increase. The average shipments of our members, used for assessment purposes, for the months of August, September and October of both 1919 and 1920 amounted to 52,474,000 face brick; corresponding approximate shipments for August, September and October, 1921, were, respectively, 59,038,000; 54,934,000; and 51,667,000. With business as a whole regarded as subnormal, we feel that this very definite evidence of a return to fair demand is highly encouraging.



The Casino and Golf Club House of the Greenbrier Hotel. The Mountains Form a Beautiful Background.

"Despite the difficulties of many kinds which the association has encountered during 1921, all of the established association activities have been aggressively carried forward and in addition, some new and exceedingly worthy features have been successfully inaugurated.

"Since the last annual meeting the secretary's office has planned and carried thru a total of 57 meetings of various kinds, of which 50 have been Division meetings, three Executive Committee meetings, three meetings of the Board of Directors, and this annual meeting. This number does not include meetings at which this association was represented by committees or by the secretary such, for instance, as meetings of the Joint Traffic Committee, Joint Research Committee and various outside meetings which were scheduled to handle matters of direct or indirect interest to this membership.

Research Program Highly Important

"The outstanding achievement of the past 12 months has been the organization, financing and development of the Joint Research Committee in the success of which I believe it can be modestly said that this association played an important part. The significance of this work of technically investigating the processes of manufacture which has been jointly undertaken by the Face, Paving, and Common Brick and Hollow Tile Associations can hardly be overestimated. Inasmuch as the chairman of the A. F. B. A. Research Committee, F. W. Butterworth, is scheduled to make a report on behalf of the Research Committee, further reference to this subject by the secretary is superfluous. However, Mr. Butterworth's report will be of added interest to our members when they understand that the Joint Research Committee had the good judgment to make him its chairman.

"The A. F. B. A. Traffic Committee has had its full share of joy and grief during 1921. This committee, of which H. E. Stringer is chairman, has done everything humanly possible to facilitate the reduction and adjustment of freight rates on

face brick. In addition to the responsibility of aiding the Joint Traffic Committee's attorneys in the preparation of briefs concerning the tentative opinion handed down by the Interstate Commerce Commission's special examiner, and the aid for the attorneys in the oral argument which was had before the entire Interstate Commerce Commission, November 10 and 12, Mr. Stringer has made every effort to obtain so-called voluntary reductions by the carriers, and while that particular object has not been secured so far, the membership should know and appreciate the intelligent efforts which Mr. Stringer and his committee have put forth in its behalf. Mr. Stringer is scheduled on this program for a report on behalf of the Traffic Committee and it will, therefore, be unnecessary for me to refer to this matter further.

Issue Wage Rate Statistics Monthly

"A new association compilation which has been of material benefit to our membership is the quarterly issue of wage rate statistics. This compilation was started during the first quarter of the current year, and its worth in keeping our membership posted on the important feature of constantly occurring wage changes is evidenced by the extensive additions in the number of plants reporting for each successive issue.

"It has always been the policy of this association to cooperate with the federal government and with all state governments to the greatest degree possible in all matters in which this association could be of help to the public. With the advent of the new federal administration we have been accorded a number of opportunities to be of assistance, and without exception we have contributed our best efforts. Three outstanding instances can be specifically referred to: first, our contribution to the Building Code Committee of the Department of Commerce, of recommendations bearing upon wall construction for small houses. Second, our compilation for the Bureau of the Census of accurate and comparable statistics from which index numbers could be figured from January 1, 1920, relating to stock on hand, unfilled orders, shipments and production. These figures will in the future be included in the publication known as 'Survey of Current Business,' issued monthly by the Bureau of the Census. Third, the splendid cooperation which has been exhibited by the Joint Research Committee, with the object of carrying thru the proposed research into technical operating problems by which this industry may cut down its avoidable wastes in fuel and man power.

Service Department Does Fine Work

"As has been customary in the past, the association has distributed, at frequent periods, bulletins on matters of timely interest. Also, we have promptly obtained and distributed copies of articles which appeared to be of special importance.

"One of the principal objectives of the association is the conduct of the promotion campaign. Dr. G. C. Mars, the director of the service department, is scheduled to address you tomorrow with respect to the work accomplished by his department. Altho the secretary has no jurisdiction in those functions assigned to the service department, he wishes to acknowledge with appreciation the cordial spirit of cooperation which must be had and which has always been shown on all matters of related interest. The secretarial department has, to the best of its ability, made special effort to keep our members posted, thru the Division meetings, with all of the latest activities and facilities of the service department.

Mountains of Mail Handled Daily

"I would like to express the wish, if it were possible of accomplishment, that each one of our members might spend at least one day in the association's headquarters noting the various activities of each department and familiarizing himself

Now is the Time for All Good Men to Come to the Aid of Their INDUSTRY.

with just what this association really means to each manufacturer in the face brick industry, whether he belongs to this organization or not. Some of our members are fairly familiar with the association's wide range of activities; others, and usually these are those located at remote distances, would, we feel be nothing less than astounded to note the enormous mails which come into our office, and the quickness and accuracy in the dispatch of all of the resultant multitude of subjects, requests, suggestions, and so forth. The very size of the piles of stamps, coins, paper money, money orders and checks to be observed on our cashier's desk each morning during the advertising season, coming from all sections of the country, and indeed of the world, to pay for this association's excellent and seductive propaganda is in itself, to me, sufficient evidence that our promotion campaign is yielding results far beyond the anticipations of the strongest supporters of this policy prior to the time the work was begun.

Endorses "Articles of Agreement"

"On October 27 the Board of Directors formally endorsed a form to be used as articles of agreement for three years following July 1, 1922, and the secretary was instructed to aggressively proceed to obtain the signatures of desirable face brick concerns to the same. At the board meeting referred to, directors whose total output in 1916 amounted to approximately 300,000,000 brick signified their intention to sign the articles of agreement on behalf of their companies. Signed contracts had been received from practically all of such directors on November 28, the total amount of their 1916 shipments being 281,000,000 face brick. In addition, a number of members not represented on the Board of Directors have sent in their signed agreements. The number of agreements which had been received on November 28 was 29, and represent shipments in 1916 of approximately 330,000,000, the exact figure not being available on account of the absence of figures representing the 1916 shipments of three plants.

"The secretary wishes to acknowledge his indebtedness to our president, Paul B. Belden, for his never-failing and always cheerful counsel and support during this exceedingly difficult year. It is to such men as Mr. Belden, who has freely given his time, best brains and unselfish efforts for the common good

that this association owes its present enviable position in the ranks of all trade associations of this country. I personally feel grateful to have again had the opportunity to work so closely with such a kindly, forceful and efficient personality."

Traffic Interest Requires Much Attention

Owing to the absence of H. E. Stringer, chairman of the Traffic Committee, who was required to remain home because of illness in his family, G. B. Luckett rendered a report which summed up briefly the activities of the committee and which brought out the point that the traffic interest of the association requires the constant attention of some qualified persons, and it was recommended by the committee that a permanent committee should be appointed to take care of all traffic matter relating to the association.

F. W. Butterworth, chairman of the Research Committee, rendered a report telling of the plans of the Research Committee, which have not yet been accomplished, and until they have been completed will not be ready for reports to the public. However, the plan as outlined by Mr. Bleininger is now being followed, and this outline was briefly described by Mr. Butterworth. It is not at all improbable that an expenditure of \$40,000 to \$50,000 a year for research work in the clayworking industry will be made.

One of the surprises of the convention was an innovation for the A. F. B. A. meetings. Secretary Hollowell sprang an informal dinner in the hotel dining room on Wednesday evening, which everyone was invited to attend. Unlike most dinners, there was no speaking on this occasion; but instead everyone joined to entertain themselves.

Famous Song Leader Present

Most of those present did not appreciate the conductor of the ceremonies on this occasion. However, Mr. Hollowell introduced Marshall Bartholomew, whose reputation as a song leader is enviable. Mr. Bartholomew, shortly after the war, went to Germany to do welfare work in the Y. M. C. A. prison service. Later he was put in charge of prison camp welfare work in Russia. He had a personally signed letter by the Kaiser to cross the lines. He was in Russia two years when the United States entered the war, and he was recalled and



A Sulphur Spring House and View of Part of the Beautiful Grounds Around the Greenbrier Hotel at White Sulphur Springs.

made director of the music bureau of the National War Welfare Council. He was made responsible for the training of all song leaders and the organization of mass singing in the United States army and navy. 370 song leaders were working under his direction. Mr. Bartholomew is now in charge of all undergraduate musical activity at Yale University, and in addition conducts a normal school for music in New York City. Under his able direction the ladies and gentlemen present at this dinner responded whole-heartedly with singing that "rang as clear as a well burned brick."

Sing Parodies on Popular Songs

Somewhere among the membership of the American Face Brick Association is a poet. His identity cannot be ascertained, but he wrote parodies on some of the well known songs and adapted them to the face brick industry. Two of these are reprinted below.

(Sung to Melody of "Over There")

Over Six, Over Six, pass the word when you've heard we're
Over Six.

That contracts are coming, contracts are coming
And the boys are a-boosting for bricks.
You're all bricks, do your tricks,
Pass the word when you've heard we're Over Six,
That we're going over—we're going over,
And we won't leave the Springs 'til we're Over, Over Six.

(Sung to the Melody of "Little Grey Home in the West")

"At my little brick plant by the hill,
When the toil of a long day is o'er,
Tho the way has been rough, and my problems seemed tough,
I forget I was weary before.
For even tho the black shadows fall,
I know I shall still find the way,
And the clouds of the night will be cleared away quite,
With the help of the A. F. B. A.

"There are hands that are waiting to help,
There are lips that are willing to cheer,
Good old Mars will still shine, on both your brick and mine,
And will help us all year after year.
All of my old friends welcomed me in,
When I signed my new contract today,
And I know no regret, since I placed my big bet
On the little old A. F. B. A."

On Thursday morning a session was held at which the first speaker was Dr. G. C. Mars, director, Service Department, American Face Brick Association. His title was given as "Results: A Fair Start." This address was a revelation of what has been done for putting face brick before the public in a manner that has given this commodity a recognition never accorded it in all its past history.

Putting Out Three New Booklets

Mr. Mars reviewed some of the publications that have been distributed and mentioned that two useful pamphlets on "How to Read Plans" and "How to Estimate Brick Work" are now coming off the press, and a third one on "Orienting a House" is now under way. There have been distributed thus far some 80,457 copies of the booklet "The Story of Brick."

Last year the inquiries resulting from advertising ran to 51,306, while this year up to November 25 they have already amounted to 100,757.

Following Dr. Mars, Herbert S. Houston, former president of the Associated Advertising Clubs of the World, addressed the delegates on a message which was entitled, "Building Good Will Into Brick." Mr. Houston first paid tribute to Dr. Mars,

who he stated was a most able man and well fitted to direct the advertising campaign of the American Face Brick Association. Below are printed excerpts from Mr. Houston's remarks, which will undoubtedly interest the readers.

"Advertising in magazines, class journals and beautiful booklets is bound to build up a great body of good will in behalf of brick. The campaign is well directed and skillfully placed."

Advertising Endures Like Brick

"Advertising is like brick—it endures. Cumulative results return both interest and principal on investment."

"Advertising creates potential building in a ratio of three to one to actual building, because the average time from inquiry to the actual operation is approximately three years."

"There are four clear advantages for going ahead on an advertising campaign—the protection of good will for brick; actual sales effected for houses soon to be built; future sales for houses you are building in people's minds; the present value of every brick house as an advertisement of brick. These advantages are accumulative in good will because the product you sell possesses great merit."

"The disadvantage that would result due to the discontinuance of advertising, would likewise result in four disadvantages: the cancellation of the production for the good will investment you have made; the shrinkage in actual sales that come thru your advertising; the shrinkage in potential sales made in people's minds, which would be marked and sudden when the educational advertising that created them was stopped; the reduction in permanent advertising value because of a reduced number of brick houses, thru this shrinkage in actual potential sales.

"The biggest loss due to discontinuance of advertising would be the general effect on the public mind. It would indicate a lack of confidence on the part of the advertiser in his own product."

Hold Consolidated Division Meeting

On Thursday afternoon a consolidated division meeting was held, on which occasion representatives from various sections of the country were called upon to report conditions in their respective locality. In general it was noted that the face brick plants thruout the country varied in operation from 60 to 100 per cent. in capacity, the average being perhaps 80 per cent. Labor in some sections had liquidated and in other sections high priced labor was still employed. The car situation was reported as good in nearly every case, and the coal situation also good with fair price existing considering mine costs and freight rates.

It was expected that when the cold bleak winter came on, building labor would realize its need for liquidating and more attractive building costs would be possible next spring. The bank situation has improved greatly with regard to building loans and municipal bonds, which will permit state, city and county building. Moreover, it was felt that before the advent of next spring, railroads would make voluntary reductions in freight rates. Every indication pointed to optimism with respect to the outlook for 1922 business.

Show Educational Film of Face Brick

The final session of the convention was held on Friday morning, which was opened with a display of the Association's educational film, "The Manufacture of Face Brick," and giving an historical account of the use of brick, also tracing the use of brick thruout the many centuries, and displaying some beautiful examples of present day face brick construction. The association has nine of these films in distribution thruout various educational sections, and they are a big help in educating the public on this worthy building material.

Following the showing of this film, E. W. McCullough, manager, Fabricated Production Department, United States Cham-

ber of Commerce, made an address on "The Present and Future of Trade Associations." He mentioned that the American Face Brick Association was a progressive and representative one, and referred to its splendid work. He recalled the cooperation given by associations to the Department of Commerce in the standardization of manufactured products, which was resulting in the elimination of much waste in industry. He stated that the trade association was a proper thing and a right and necessary effort at this time. Moreover, he said President Harding was in favor of more "across the table" talks, and he felt that a good many evils in industry were due to misunderstandings.

Eben Rodgers New President

Before the adjournment the officers for the ensuing year were elected as follows: President, Eben Rodgers, Alton (Ill.) Brick Co.; first vice-president, B. Mifflin Hood, Legg Brick Co., Atlanta, Ga.; second vice-president, T. P. Cuthbert, Fallston Fire Clay Co., Pittsburgh, Pa. Board of directors, B. W. Ballou, G. A. Bass, H. R. Beagle, P. B. Belden, W. H. Hoagland, H. R. Mears, W. S. Smit.

The new president, Eben Rodgers, is a well known figure in the clay products industry. He is regarded as one of the most progressive among manufacturers and can be relied upon to keep the American Face Brick Association in the course that it has pursued in the past along the lines of pep, punch and improved service for each individual member.

Quite a few of the manufacturers had exhibits of their product in one of the rooms set aside for this purpose. Among those who had samples of their brick on hand were: Carlyle-Labold Co., Portsmouth, Ohio; The Belden Brick Co., Canton, Ohio; Gloninger & Co., Pittsburgh, Pa.; Clay-Craft Mining & Brick Co., Columbus, Ohio; Clay Products Co., Brazil, Ind.; Alton Brick Co., St. Louis, Mo.; Sphar Brick Co., Inc., Maysville, Ky.; B. Mifflin Hood Brick Co., Atlanta, Ga.; Columbus Fire & Face Brick Co., Columbus, Ohio; Hay-Walker Brick Co., Pittsburgh, Pa.; Mapleton Clay Products Co., Canton, Ohio; Sumter (S. C.) Brick Works.

A list of manufacturers and dealers who attended the convention will be found on page 924.



FACE BRICK DEALERS ELECT 1922 OFFICERS

At a meeting held at the Greenbrier Hotel, White Sulphur Springs, West Virginia, on Thursday, December 1, twenty-five face brick dealers who were in attendance at the Annual Convention of the American Face Brick Association, met in a session and re-adopted the former constitution and by-laws which were in effect until two years ago. Under this plan the annual dues of each member are twenty-five dollars with no further assessment.

Bert T. Wheeler, of the Kimball-Wheeler Brick Co., Chicago, was elected president with the following supporting officers: Vice-president, W. Fry, Fischer Lime & Cement Company, Memphis, Tenn.; secretary-treasurer, Nelson LeBar, Scranton, Pa.

Board of Directors: R. L. Findlay, New York; J. H. Donahue, Jr., Minneapolis; Ralph Spencer, Detroit; John M. Stoner, Cincinnati; J. A. Dolben, Boston.

Mr. Wheeler, upon accepting the office of chairman, emphasized his plan of action for the association for the coming year which was to cooperate whole heartedly with the manufacturers working for the greater use of face brick.

There was a very strong sentiment expressed by several of the dealers present for one hundred per cent. dealer cooperation on the part of the manufacturers. At the same time, it was emphasized that the manufacturers have very definite rights which the face brick dealer should recognize.

SOME LUMBER PROPAGANDA

The advertisement reprinted here appeared in a recent issue of the Chicago Tribune and indicated the kind of propaganda which the National Lumber Manufacturers' Association finds it necessary to promulgate. A study of the figures

Actual Facts on Home Building Costs



LUMBER is the most economical building material. It lends itself readily to distinctive architectural design, and, when properly used, LUMBER LASTS.

What is more, there is plenty of lumber. Lumber, if used without waste, will be available for years to come at comparatively low cost.

Of course the nation's timber supply must be conservatively used, but there is no reason why LUMBER should not continue to be, for our great grandchildren, what it was for our grandfathers—THE HOME BUILDER'S FAVORITE.

SKETCHED above is an attractive small house built in a typical American midwest community. This house in November, 1921 (exclusive of heating and plumbing), constructed of various materials, cost:

Frame with wood siding	\$4080.00
Frame with cement stucco on wood lath	4177.00
Frame with cement stucco on metal lath	4213.00
Stucco on hollow tile	4627.00
Common brick (solid)	4717.00
Common brick with face brick front	5007.00

The cost of the interior construction—windows, doors, floors, partitions, trim, etc.—for this house remains constant regardless of the character of outside walls, but slight changes in detail of exterior finish are required to suit different materials slightly affecting cost. The cost of various materials when used for the enclosing walls is:

Type	Cost	Increase over Frame with Wood Siding	Percentage of total Building Cost
Frame with wood siding	\$ 656.00		16 per cent
Frame with cement stucco on wood lath	709.00	8 per cent	17 per cent
Frame with cement stucco on metal lath	745.00	14 per cent	18 per cent
Stucco on hollow tile	1064.00	62 per cent	26 per cent
Common brick (solid)	1186.00	81 per cent	29 per cent
Common brick with face brick front	1436.00	119 per cent	35 per cent

Build of Wood—and Build Now

NATIONAL LUMBER MANUFACTURERS ASSOCIATION

Harris Trust Building
Chicago

A Sample of the Kind of Advertising Which the Lumber People Are Now Doing.

will show that they are somewhat misleading and tend to make the builder think that brick houses are a great deal more expensive than they actually are. All over the country brick is encroaching on lumber and the percentage of brick houses is growing daily.



BRICK TAKES CONTRACT FROM MACADAM

The Ohio Department of Highways and Public Works has re-awarded the contract for grading, constructing bridges and culverts and paving 1.58 miles of the Youngstown-East Liverpool road in Columbiana County to the Cavanaugh-Deniro Co. The contract was originally awarded to R. H. Shaffer for bituminous macadam, and on the complaint of residents along the road it was changed to brick construction.



ADVANCE CLEVELAND BUILDING SHOW DATE

Postponement of the American Building Exposition dates to February 22 to March 4 will aid this event when it opens in the new public hall in Cleveland, Ohio, according to officials who have revised the plans this week. More exhibits will be possible thru the delay in opening. Herbert Mathews, identified with real estate and building development in Northern Ohio for more than a quarter of a century, has been appointed chairman of an exhibits committee which will consider new exhibits. Meanwhile more than 30 exhibits, each costing from \$25,000, down to \$1,000, are being built now. Since the public hall is many times larger than the hall that housed the original Com-

plete Building Show, a tremendous attendance from all parts of the country is anticipated, according to Ralph P. Stoddard, managing director. This opinion is based upon the number of paid admissions to the 1916 show, which totalled 120,000. At least four complete houses will be built for this exposition, according to R. G. Collier, assistant manager.



HOLLOW TILE MEN TO MEET IN JANUARY

At a meeting of the directors of the Hollow Building Tile Association held recently, it was decided to hold the annual convention on January 25 and 26, 1922. As has been the organization's custom in the last few years the meeting will again be held at Chicago, at the La Salle Hotel. Tho business has in many cases been dull the past season, the year has on the whole been an eventful one and the coming meeting should be very interesting.

The association directors will meet on January 24 and the regular meeting will begin January 25 and extend over to January 26. A most attractive program is being prepared and it is planned to make the meeting one of the most interesting yet held. On the program will be P. H. Bevier, of New York, who will cover thoroly the work of the Hollow Building Tile Association at the Bureau of Standards. This talk will be illustrated with stereopticon views and since the association maintains a fellowship at the Bureau it should be extremely interesting to members to hear what Mr. Bevier has to say.

There will also be a review of the work of the Joint Research Committee recounting the progress already made and the future plans of the committee. Two or three nationally known men will address the convention on subjects of interest to the association.

The Hollow Building Tile Association is one of the most

progressive organizations in the industry and since its inception hollow tile has steadily grown in importance until in the report of the Geological Survey on clay products production in 1920, that product made a better showing than any of the older products in the clay industry.



PAVING BRICK MEN VISIT NEW PLANT

About 12 members of the Western Paving Brick Manufacturers' Association were present at the regular monthly directors' meeting for November, which was held at Mineral Wells, Tex. The meeting was held in that city in order to give the members an opportunity to look over the Mineral Wells Paving Brick Co. which was recently constructed at that city. The first brick in this plant were burned this past summer, and the company is just now getting into real production of pavers.

There are in operation at present 12 beehive down-draft kilns, and foundations are in for four more. These kilns will complete the plant and give it a capacity of some 50,000 brick per day.

The shale at the Mineral Wells plant is similar to that encountered at Thurber, Tex., about 50 miles west, from which excellent paving brick have been made in the past.

The Mineral Wells Co. burns its brick with natural gas from gas wells recently developed two or three miles south of Mineral Wells.

A. E. Eaton, formerly sales manager of the Thurber Brick Co. and originally connected with several brick plants in Illinois, laid out and constructed the plant and has been made general manager.

The brick plant is very compact, very well arranged on a down grade all the way from the shale pit thru the machines, dryer and kilns to the loading track.



Canadians Announce Fine Program for Convention

THE TWENTIETH ANNUAL CONVENTION of the Canadian National Clay Products Association will be held at the Carls-Rite Hotel, Toronto, on February 7, 8 and 9. In a previous issue of Brick and Clay Record the dates for this convention were given as January 24, 25 and 26, this has been changed, and the dates now set are in February as mentioned.

The program has been arranged for and many interesting speakers and subjects will make up the program. F. L. Ferguson, of the Ontario Agricultural College at Guelph, will speak on the subject of "Field Tile in Canadian Agriculture." The Ontario Agricultural College furnishes engineering service in drain tile laying free to farmers in Ontario and since he is in close touch with conditions, Mr. Ferguson's talk should contain much information that is of great interest to the Canadian manufacturer.

A. G. Dalzell Will Speak

The "National Importance of the Clay Industries" will be discussed by A. G. Dalzell, consulting engineer of the Vitriified Clay Publicity Bureau, Toronto. It will be remembered by delegates to last year's convention that Mr. Dalzell on that occasion gave a most interesting talk on clay sewer pipe. His subject for this year's meeting is full of promise, and no doubt will prove very interesting.

Three technical subjects, treating of modern methods and equipment have been scheduled and will no doubt prove highly interesting. They are, "Handling Clay with Conveyors," by Wm. Burgess, superintendent of the Don Valley Brick Works,

Todmorden; "Tunnel Kilns," by George Booth, Islington, manufacturer of the Booth tunnel kiln; "Use of Coal for Kiln Burning," by E. C. Hanson, consulting engineer.

There will also be a talk of sales interest under the head of "Making and Marketing Drain Tile," by H. H. Hallatt, Tilbury (Ont.) Brick & Tile Co. Since the possibilities of tile drainage in Canada are great, very little development having taken place, this subject should be one of intense interest to Canadian clay manufacturers.

Accommodations Secured at Carls-Rite

R. B. Morley, secretary of the Industrial Accident Prevention Association, will address the delegates on the subject of "Safety in Clay Products Industries."

The International Business Machine Co. will give a paper on cost keeping and will demonstrate the Hollerith tabulating and sorting machines, which are operated by electricity.

As in former years the meeting place for the convention delegates will be the Carls-Rite Hotel, where arrangements have been made to take care of the convention. The annual banquet will also be held in this hotel on Wednesday evening, February 8.

Rates at the Carls-Rite are as follows:

American Plan—Room without bath, including all meals, \$5 per day, per person. Room with private bath with all meals included, \$6 per day, per person.

European Plan—Room without bath, \$2.50 per day, per person. Room with private bath, \$3.50 and \$4.

No Common Brick Makers Who Claim Progressiveness Will Want to Miss the St. Louis Meeting

Expect 40% Business Increase in 1922

Delegates to Convention of National Paving Brick Manufacturers Association Express Satisfaction with 1921 Accomplishments—Great Spirit Prevails at Meeting

BEST MEETING in the history of the organization, in the matter of spirit, confidence for the future, satisfaction with what has been accomplished in the last year, and prospects for more business, and in attendance as well, marked the annual conference of the National Paving Brick Manufacturers' Association, held at Pittsburgh, Pa., December 6 and 7. Nearly 100 members attended. A wide interchange of ideas was had, as well as authoritative information from those identified with the highways industry outside of the association itself.

Primarily the meeting was held to plan for the activities of 1922. To this end a tentative program was adopted. Activities will be divided into three main groups—educational, development and organization.

Advertising Program for 1922

The educational division will be given over mainly to publicity work. Herein will be incorporated advertising in trade journals, the publication of Dependable Highways, organ of the national association; news service to daily newspapers, compilation of reports, reprints and specifications. The development division will involve the furtherance of the joint clay products research, and an interchange of the uniform cost finding system. The organization division will have to do with the operation of national headquarters, inspection trips and the like, Washington representation and similar work.

Based upon past work, and the improvement in outlet for paving brick during 1921, it was the opinion of members present that a 40-per cent. increase in the use of paving brick during 1922 over the present year can be considered assured. In view of the fact that large road building programs have been adopted in many states, which will be helped by the addition of Federal Capital, this opinion was not held to be too optimistic.

Well Known Men Address Convention

Speakers and their subjects at this meeting included A. V. Bleining, chairman of the technical committee of the joint research committee; R. C. Purdy, secretary, American Ceramic Society; E. J. Mehren, editor, the Engineering News-Record, on the relation of trade associations to the engineering profession; Arthur H. Blanchard, of the University of Michigan, on educational work of the trade association in the highway field; E. W. McCullough, manager, the fabricated production department of the United States Chamber of Commerce on relation of trade associations with each other.

Definite action at this meeting included the adoption of a resolution, in which the association favored specifying asphalt filled types of brick pavement as the preferred type of the organization for general use, tho without prejudice to other types which may be especially adaptable to particular local conditions.

The association also adopted the simplification of varieties program which was offered in detail in the last issue of Brick and Clay Record. The advisory committee of the national body, including the executives of the territorial associations, is preparing the 1922 edition of the national association specifications, and will include these standards with them.

A. C. S. OFFICERS NOMINATED

The Nominating Committee of the American Ceramic Society has made the following report on nominations for officers for the year 1922-1923:

President—F. H. Riddle, Champion Porcelain Co., Detroit, Mich.

Vice-president—E. W. Tillotson, Mellon Institute, Pittsburgh, Pa.

Treasurer—R. K. Hursh, University of Illinois, Urbana, Ill.

Trustee—B. E. Salisbury, Onondaga Pottery Co., Syracuse, N. Y.

According to the A. C. S. constitution any ten members, at least five of whom shall be active, may constitute a self-appointed nominating committee and present the names of any nominees to the secretary, provided this is done at least 30 days before the annual meeting.



BRICK MARKET STEADILY GROWING BETTER

"In a speech which he recently made in Cleveland, Roger Babson indicated that brick is one of the commodities which has not as yet reached bottom and has still a little farther to go," says the monthly digest of the Common Brick Manufacturers' Association published December 1.

Brick can go lower in price only by an increased production, and an increased production will not come until there is an increased demand. There is nothing to indicate a stampede or an abnormal demand which might create a condition which would send prices higher. Rather, there is an indication that the demand will be slowly but rather steadily increased, permitting the plants to operate at a point nearer normal than they have in the past. Such a demand unquestionably would lower the cost of production and would be reflected in lower prices in some sections. In certain markets the price of brick today is below the cost of production. It has been consistently too low in the southeastern states for several months.

Looking over the reports from 102 manufacturers thruout the country, we gather these facts. The prices generally are being equalized. Some of the maximum have been lowered and some minimums have been raised.

Plants reporting have produced during the past month a little over 82,000,000 brick. The same plants have moved out of their yard during the month over 80,000,000 brick. The stocks of burned brick on hand, compared with practically the same number of firms reporting a month ago, show a slight increase of about 25,000,000. The orders on the books show a similar increase, being just a shade better. This carries out our contention of the past three months that the market for brick is headed in the right direction and is consistently maintaining an increased demand.

The building brick manufacturers in Ohio face a peculiar situation. Ohio is one of the largest clay producing states in the Union. Recently the Public Utilities Commission ordered a lower rate upon paving materials including paving brick. This rate has permitted the manufacturers of shale brick, which may

Watch the Awakening of the Common Brick Industry—at St. Louis.

be used either for paving or building purposes, to ship the brick as pavers at the lower rate, the brick actually being used as builders when they arrive at the destination. The result is actual discrimination against the manufacturer of building brick. The matter is being brought to the attention of the Public Utilities Commission, with some hope of relief, it is believed.

* * *

SHORT COURSE IN CERAMIC ENGINEERING

The regular biennial two weeks short course in ceramic engineering will be given next January at the University of Illinois, between the dates of January 23 and February 4. The subjects covered will include elementary physics and chemistry; the origin, classification, winning and refining, and testing of clays; the shaping, drying and burning of clay products; bodies and glazes; the technology of glass; refractories and refractory products; kiln construction; coal and gas fuels; engines and boilers, dynamos and motors, equipment control; pyrometry; drafting and reading of drawings, and business law.

The complete program will be ready for distribution early in January and copies may be secured by addressing the Department of Ceramic Engineering, University of Illinois, Urbana, Ill. The course is open to all who are interested and can be taken to advantage by any one having a common school education. There are no tuition fees.



W. H. Gifford to be Secretary-Manager of S. S. Kimbell

W. H. GIFFORD, well known face brick man, has taken an interest in the S. S. Kimbell Brick Co., Chicago, Ill., and will take over the duties of secretary and manager the first of next year. Mr. Gifford held the position of manager of the brick department of the Wisconsin Lime & Cement Co., large Chicago building material dealers, for more than three years. Previous to that time he was with the Cleveland (Ohio) Builders Supply Co. for nine years in the position of salesman and sales manager. During the past year Mr. Gifford has been connected with the Reliance Brick Co., Kansas City, Mo., large face brick dealers.

The S. S. Kimbell Brick Co. is one of the oldest and best known firms of brick dealers in the country. The company was organized by S. S. Kimbell in 1900 and he remained presi-

dent of it until his death in 1907. Mr. Kimbell was widely known thruout the industry. After his death it became necessary to choose a new head and L. D. Binyon was elected to the office of president, which office he now holds.

Face brick men will remember that James A. Hogan was associated with Mr. Binyon for a long time as secretary-treasurer of the company, an office which he held up to the time of his death, two years ago.

Herman L. Matz, also a very well known man in the face brick industry, and prominently identified with the construction industry in Chicago, has been vice-president of the S. S. Kimbell Brick Co., since its organization and will continue in that capacity. H. O. Binyon, brother to L. D. Binyon, will become treasurer January 1, 1922.

CONVENTIONS IN PROSPECT

December 13 and 14—Eastern Paving Brick Manufacturers Association, Pennsylvania Hotel, New York City.

January 24—Kentucky Clay Products Association, Louisville, Ky.

January 23, 24, 25, 26, 27 and 28—National Brick Manufacturers Association, Claypool Hotel, Indianapolis, Ind.

January 25 and 26—Hollow Building Tile Association, La Salle Hotel, Chicago, Ill.

January 30, 31 and February 1—Common Brick Manufacturers Association, Hotel Statler, St. Louis, Mo.

February 7, 8 and 9—Canadian National Clay Products Association, Carls-Rite Hotel, Toronto, Canada.

February 27, 28, March 1 and 2—American Ceramic Society, St. Louis, Mo.



L. D. BINYON.



WM. H. GIFFORD.



HERMAN L. MATZ.

C. B. M. A. to Play Trump Card

Will Spring Surprise in Shape of New Activity
—St. Louis Convention to be Strictly a “Brickmen’s Meeting”—Well Known Men on Program

SOMETHING DIFFERENT in the way of a brick manufacturers’ meeting is promised when the third annual convention of the Common Brick Manufacturers’ Association of America meets at Hotel Statler, St. Louis, on Monday, Tuesday and Wednesday, January 30, 31 and February 1, 1922.

This will be the first time that the common brick manufacturers have held an exclusive convention. For three days there will be sessions dealing strictly with the commercial side of the common brick business. It is the belief of the leading brick manufacturers of the country that the downward tendency of their industry and the decided falling off in consumption of their material during the past 20 years is due to the neglect of the merchandising end of the business. Something has been done thru these years to improve the quality of the product and to reduce the cost of manufacture, but until the Common Brick Manufacturers’ Association was formed practically nothing had been done to study the market for brick or to expand that market.

As one prominent manufacturer expresses it, “The brick man has stood with his face to the clay bank. He has made good brick and thrown them back of him expecting somebody to come and take them away and pay him for it. He has willingly thrown off a dollar a thousand on his brick whenever he thought it was necessary to get an order, even tho that dollar may have represented more than his net profit. But very few if any have spent one cent a thousand to improve the market or keep the demand up so that it was not necessary to throw away the profits.”

Will Be Strictly a “Brickmen’s” Meeting

It is the realization of this condition on the part of nearly 400 manufacturers thruout the country that gives to the Common Brick Manufacturers’ Association its potency.

The St. Louis meeting is to be a brickman’s meeting in the strictest sense of the word. On the floor of the convention there will be open discussion of all the policies of the association. The present activities will be explained and thoroly reported upon. There will be proposed one new activity, which, if approved by those present, will at once be set to work in the interest of the brick manufacturers. It is believed that this new activity, the nature of which will not be revealed until the convention, will immediately have a most beneficial result upon the brick business. It strengthens one of the links in the chain that holds the industry together. It will directly stimulate brick thru the country. It is something entirely new and probably never before discussed at a brick convention. It will come out of the clear sky much as did the announcement of the Ideal wall at the convention of this association a year ago.

Elmo Martin Will Address Delegates

Among the speakers already secured for the St. Louis convention is Josiah Kirby, president of the Cleveland Discount Co., the second largest mortgage company in the country. Mr. Kirby has spoken before many national associations and is known from coast to coast as an authority upon construction loans and the building situation generally.

Another feature quite out of the ordinary will be a black-board talk by Elmo Martin. Mr. Martin is retained by some of the largest industrial concerns in the country to speak regularly before their executives. He helps business men to think straight. Mr. Martin’s talk alone will justify a trip to St. Louis from any part of the country on the part of any business man who takes his business seriously.

There will be a report of the Joint Research Council, which is actively engaged at the present time in the study of burning methods. This investigation is being carried to the plants of members and it is already believed by many to be the most constructive work that ever has been done in this country for the brick manufacturer. This is honest-to-goodness effort to improve the product and lower the cost of manufacture, conducted by recognized experts and supported jointly by the face, paving and common brick, and hollow tile associations.

Boyd to Speak on Substitute Brick

D. Knickerbacker Boyd, consulting architect of the association, Philadelphia, will have a most interesting story to tell the



The Hotel Statler, St. Louis, Where C. B. M. A. Will Meet.

brick men. Some of the brick men have already felt the effort of substitute brick. This opposition is rolling up like a cyclone cloud. The brick manufacturer has one of two things to do, either build up his business against this attack or take to the cyclone cellar. The latter is an admission of defeat. If there was no other feature on the program, the brick men of this country could not afford to miss the report that Mr. Boyd will make regarding the efforts of the Common Brick Manufacturers’ Association along technical lines.

There is something most interesting to report in the way



The Splendid Roof Garden of the Hotel Statler at St. Louis, Mo., Where the Common Brick Men Will Gather in January.

of tests of brick work that have been made in recent months. Wm. Carver, the staff architect of the association, will prove to every one present that the absence of engineering data based upon tests has taken millions of dollars' worth of work away from the brick men and given it to the substitutes. Every brick man should hear Mr. Carver's talk and learn how he can take the information provided by the Bureau of Standards and apply it to his own product without any expense for further tests.

Vast Sums Spent on Advertising

One session of the convention will be devoted to reports from various members upon local advertising work. It is estimated that there has been more money spent for local advertising for brick during the past year than in all the history of the industry previous to last year. In connection with this discussion there will be a display of advertising that every one will want to see.

On Tuesday evening, January 31, there will be an informal dinner. For this event three speakers of national prominence have been secured. When the names of these speakers are revealed every brick man will realize that he cannot afford to miss hearing them.

There will be special entertainment for the ladies and all members are urged to bring with them their families that old acquaintances may be renewed and new acquaintances made.

Special rates of a round trip for one fare and a half have been secured from several of the larger passenger associations. Every person attending the convention should take a certificate from the agent from whom he purchases transportation. Buy a ticket to St. Louis only. At St. Louis, by presentation of this certificate, a return trip over the same line may be bought at one-half rate. This will mean a distinct saving for the members of the C. B. M. A., who have a long distance to travel. It is necessary to have 350 certificates issued in order to make the reduced rate effective.

Trip to St. Louis Is Good Investment

The Hotel Statler has agreed to provide first class accommodations to every delegate to this convention. Ralph P. Stoddard, secretary-manager of the C. B. M. A. will gladly make

reservations for all who will write to him and give the date of their arrival at St. Louis and number of rooms wanted.

Brick manufacturers may look upon the cost of a trip to St. Louis as a good investment. There they will meet the most progressive and enterprising manufacturers of the entire country. They will meet also the leading manufacturers of clay machinery and equipment, who have already engaged large space for exhibition purposes. They will see an exposition also of all the advertising and literature produced during the year by the association. They will see photographs of scores of buildings of all types built during the past year with Ideal walls. A profitable three days can be spent at St. Louis. The brick man who stays away is sure to miss something that is really of advantage to him.

* * *

CONDUCTING FIRE RESISTANCE TESTS

Work on the fire resistance of building materials has been actively pushed during the year by the U. S. Department of Commerce. A technologic paper on the fire tests of concrete columns is now being prepared for publication. An extensive program of tests of brick walls, made up into panels 11 by 16 feet in size, has been laid out and the experiments are well under way. Both 8 and 12 inch walls are to be tested under fire conditions and their effectiveness as fire barriers determined. In cooperation with the Hollow Building Tile Association an investigation has been commenced on the fire resistance under load of hollow tile. A room is being equipped for special work on ignition points of various substances, spontaneous ignition, and so forth.

Strength tests are being made of brick hollow walls, and if the results are satisfactory, a direction for economizing in building construction may be pointed out.

* * *

72 CERAMIC STUDENTS AT ILLINOIS "U."

Of the 9,084 bona fide resident students enrolled at the University of Illinois this semester, 1,892 undergraduates have registered in architecture and the college of engineering. In the class of ceramic engineering there are 72 pupils.

Results: A Fair Start

Remarkable Article of Intense Interest Reviewing What Has Been Accomplished by the A. F. B. A. in the Way of Promotion Work

By Dr. G. C. Mars

Director of Service, American Face Brick Association

IN JULY of 1919, the Department of Service, in order to carry on a general campaign of national publicity for the American Face Brick Association, was called into action. A program was outlined and presented to the Board of Directors at their August meeting at Niagara Falls, and approved. This program involved:

(1) the national competition among architects for a small face brick house, and resulted in "The Home of Beauty;" (2) the preparation of the "Story of Brick," as a booklet for free distribution, presenting the merits of face brick; (3) a Manual of Face Brick Construction, including house plans, for the small town builder; (4) a table of comparative costs, covering, so far as possible, the entire country; (5) a plan for national advertising, to begin the following spring; (6) an outline of local advertising for members and dealers, and (7) a number of pamphlets for general distribution.

This program was presented in its entirety to you at your annual meeting at French Lick Springs two years ago, that is, in December of 1919, and some of the work, already done, shown you.

Advertising Began in 1920

In February of 1920, enough of the work was completed to justify our appearance before the public, and so at that time we first began our national advertising campaign.

You have been shown, from time to time, every piece of copy that has appeared, so that it is not necessary to point out its character, which has received the highest commendation from all sorts of discriminating people. Suffice it to say, 20 national journals of the best type were used, representing over 13½ million distribution, which meant at least 25 million different readers. Besides, we used eight architectural and four trade publications, appealing to 95,000 paid subscribers.

In the meantime, we were preparing material for a series of bungalow and small house booklets, factory and industrial housing plans, an architect's portfolio, an educational 2-reel film on the manufacture of face brick, and sundry small pamphlets.

There was also carried on an extensive cooperative publicity in conjunction with the Common Brick and Hollow Tile Associations, thru the Permanent Builder, in having our house plans run in the home building pages of many metropolitan and country papers.

And negotiations were under way for the employment of a field man to aid local chambers of commerce or building committees in their housing plans.

High Prices Caused Buyers' Strike

As you know, the peak of prices came in the early summer of the year, and with it the general buyers' strike, which, unfortunately, was widened and prolonged by all sorts of other strikes, and all sorts of impossible editorial and reportorial misinformation; by zealous investigating committees, whose discoveries of industrial and commercial corruption, hitherto un-

known and undreamed of, as they thought, fairly gagged the oppressed and long-suffering public; by sundry and various world-fixers, who had an inspired commission to transform human beings into angelic creatures with sprouting wings; and finally by certain justifiable reasons such an unavoidable disturbance in world exchanges that threw the normal readjustment of prices into a confused jumble.

Had to Muffle Force of Drive

The readjustment has not yet reached its term, and will not reach its term so long as the farmer gets for his products only 19 per cent. above the pre-war level—to trust the U. S. Bureau of Labor Statistics, a rather questionable thing to do, to be sure,—the food man only 42 per cent. more, and the metal man only 21 per cent. more, while the clothing man gets 90 per cent.,



DR. G. C. MARS

the fuel man 82 per cent., the material man 92 per cent., and the furniture man 118 per cent. more; yet the readjustment is steadily going on as the general commodity average is down to a 50 per cent. excess over 1913 prices, which may be regarded as a fairly normal and steady level. So we may hope that very soon, or as soon, at least, as H. G. Wells, who has swallowed the universe for his mental digestion, gets thru with us, everything will be geared down or up, whichever you please, to the nicety of a gnat's eyebrow, and we shall be hitting on all four cylinders.

But for our Service Department, it meant a sealing down of

the program in 1920 and 1921, so as to muffle, in a manner of speaking, the force of our drive.

Be that as it may, we went into the 1921 campaign with an appeal to 10½ million subscribers or a possible 20 million different readers thru the medium of 17 national, eight architectural, and five trade journals, with the determination to make face brick favorably known to the American public, so far at least as this restricted number of mediums would make possible.

In the meantime, during this past year, we have completed the educational film, one copy of which is kept at the studio for casual use, and nine are now being exhibited from the following centers:

University of Texas, Austin, Texas.

University of Kansas, Lawrence, Kansas.

University of Michigan, Ann Arbor, Michigan.

New Jersey State Museum, Trenton, New Jersey.

Cleveland School of Education, Cleveland, Ohio.

University of Pittsburgh, Pittsburgh, Pennsylvania.

University of Minnesota, Minneapolis, Minnesota.

Iowa State College, Ames, Iowa.

Indiana University, Bloomington, Indiana.

The film thus far has been exhibited to 45,345 people in attendance at 69 different places, where from 100 to 1,100 were present.

Print Much Instructive Literature

By May, the first issue of the "Bungalow and Small House Plans," of 64 designs, was completed and the distribution begun, while 28 new ones have been finished and are ready for the spring campaign. Two useful pamphlets on how to read plans and how to estimate brickwork are now coming off the press, and a third one on orienting the house is under way.

In the spring, a competition among young married women, for Home of Beauty plans aroused great interest and brought in between 500 and 600 essays. The judges awarded 35 prizes, the first prize going to Mrs. Dr. B. F. Reynolds, of Carlisle, Ky., whose admirable essay appears in the December number of The House Beautiful, a copy of which will be sent you.

The architect's portfolio is sufficiently complete for general distribution, altho much of interest is still to be added. This portfolio has already been placed in your hands.

Urges Local Advertising

Two further activities of the year need mention. One is the mat service of plans to papers which present our brick house designs in an attractive way in their home-building sections, without cost to us, except that of the mats. This work I urge upon you and your dealers. Whenever you can get your local papers to run these designs we will furnish you the mats at cost, which falls considerably below one dollar each. The other is a work among brick masons' unions, in cooperation with the Common Brick Manufacturers' and Hollow Tile Associations, thru The Permanent Builder, by which the unions are induced to use the copy we furnish them in local advertising. Thus far, as reported by Mr. Rorick, of The Permanent Builder, 20 unions are advertising in 23 local papers, going to 621,341 readers. These advertisements are running in the following papers:

Gazette, Niagara Falls, N. Y.....	12,345
Evening Huronite, Huron, S. D.....	7,000
Daily Capital, Topeka, Kas.....	34,257
Item, Philadelphia, Pa.....	37,860
Times Picayune, New Orleans, La.....	91,305
Evening Sun, Paducah, Ky.....	5,106
New Democrat, Paducah, Ky.....	5,538
Kansas, Kansas City, Kas.....	19,179
Daily Post, La Salle, Ill.....	2,534
Herald, Grand Rapids, Mich.....	30,803

Labor Advocate, El Paso, Tex.....	13,000
Post Star, Glens Falls, N. Y.....	7,455
Journal Gazette, Fort Wayne, Ind.....	27,327
Daily Press, Pontiac, Mich.....	12,776
Evening Telegraph, Alton, Ill.....	4,760
Daily Times, Alton, Ill.....	4,255
Star Telegram, Fort Worth, Tex.....	88,644
Union Star, Schenectady, N. Y.....	13,824
Gazette, Schenectady, N. Y.....	20,521
American, Hattiesburg, Miss.....	4,439
Poteau Weekly News, Poteau, Okla.....	
New York World, New York, N. Y.....	621,341
Daily Sun, Neodesha, Kas.....	1,025

(Up to November 26, 1921)

Results Very Gratifying

But now most of all, you want results. These results are naturally less than they would have been, if we had not been checked in our program; but I feel free to say that they are more gratifying than I could have anticipated.

As you know, we planned to spend \$250,000 a year, as approved by your committee. From July 1, 1919, to November 21, 1921, the Service Department has expended \$464,095.07, which for the period of 29 months or two years and five months, means an average yearly expenditure of \$192,048 or \$57,952 less than the annual allowed appropriation. As 7 months of this time were spent in preparation, we did not begin advertising until February of 1920. In other words, we have been before the public 22 months or two months less than two years. In that time, up to November 25, we have distributed "The Story of Brick" to the general public, on individual request, to the number of 71,659 copies, and by sale to members and dealers 8,798; in all, 80,457. We shall soon need a third edition. Please let me have your criticism and suggestion for its revision. The effect of this distribution may be seen in the innumerable commendations of the booklet, voluntarily sent us.

Many Thousand Booklets Sold

The "Home of Beauty" has gone out on request to the number of 46,072, most of them paid for, as you will see later, while 5,260 have been sold to members and dealers, making in all 51,332.

A "Manual of Face Brick Construction," which has not as yet been offered to the public generally, but only thru the trade papers, has been distributed, mostly by sale, to 4,464 people, and 3,855 have been sold to members and dealers, in all, 8,319 copies. For this booklet we also receive many commendations, but as yet it has not received the favor it deserves. Perhaps it is the price to the trade of \$1, or the fact that it has not been offered to the public.

"Bungalow and Small House Plans," issued for distribution in May of this year, have run to a distribution of 37,880 copies by November 25, and still going strong; 8,002 have been bought by members and dealers, making a total of 45,882. Please note, that of these valuable booklets, most of which have been paid for, a total of 186,000 are in the hands of the public, working for face brick.

Plan Service Creates Much Interest

Of pamphlets and post cards, over 96,000 have been sold to members or given away.

A widespread interest in our plan service has been shown and many prospects for building developed. Thus far, 132 "Home of Beauty" plans have been bought, exclusive of those sold to members. To the competitors, as already indicated, 35 have been given away, making a total of 167 in the hands of prospective builders. Only 12 Manual plans have been sold; but the "Bungalow and Small House Plans" seem to be favor-

Are You Going to St. Louis?—If Not, Why Not?

ites, as already 98 plans are in the hands of intending home owners.

We carefully follow up these prospects, to aid the good work, as far as we can, and to get possible illustrations of small face brick houses. We find many are waiting for better conditions, but some have built, and a few of these have been induced to send pictures, such as we have reproduced in the little pamphlet in your hands. George W. Repp, who has charge of this work, is not only a finished draftsman and designer, but has had a dozen or more years of practical experience, which makes him a very careful and reliable adviser on building problems. Out of all these various requests there have developed what may be called distinct prospects to the number of 15,758, all of which have been properly tabulated and sent you.

Booklets Bring in Neat Sum

But these are not the only results from our 22 months of advertising. I promised to spread your fame as manufacturers of face brick, thru advertising, but I did not promise to return you any revenue. However, not believing in giving away valuable material, especially as people prize more what they pay for, your committee decided to make a nominal charge for our booklets, not so much to get back money as to deter irresponsible applicants. This part of our results is most gratifying, as it materially helps to carry the cost of our literature. Thus, the sale of our booklets and plans show the following figures from February 1, 1920, to December 1, 1921, or the 22 months under consideration:

Home of Beauty.....	\$29,823.13
Story of Brick.....	2,368.80
Manual	6,675.40
Bungalows	7,805.90
Pamphlets	1,491.18
<hr/>	
Total booklets and pamphlets.....	\$48,164.41
H Plans	\$3,341.04
M Plans	220.50
B Plans	1,760.60
<hr/>	
Total Plans	\$5,322.14
<hr/>	
	5,322.14
<hr/>	
Total	\$53,486.55

Spend Less Than Allotted Quota

If these returns be subtracted from the total expenditure of \$464,095.07 we have a net expenditure of \$410,608.52 for the 29 months, or at an average rate of \$169,908.00 per year. This means that the Service Department has used \$80,092.00 per year less than the \$250,000 appropriation allowed.

The most gratifying feature of these results, as tabulated, is the evident growth of strength in our appeal, or the cumulative effect of past effort, as may be seen in a simple comparison of this year's with last year's results. Thus far the year ending December 31, 1920, the total inquiries ran to 51,306, while this year, up to November 25, they have already mounted to 100,757, with over a month still to be reported. The whole of last year brought 7,302 reported prospects, while thus far this year we have 8,436. In considering this year's returns, we must not, of course, overlook the part in them due to the momentum of last year's work. But allowing for all that, there is evidently a great increase over last year, in spite of the fact that we cut out some of the 1920 publications and lessened our circle of readers in number by from two to three millions.

A comparison of the three fall building months may be interesting. We have for

	1920	1921
September	6,837	10,345

October	7,225	17,700
November	7,902	17,316

This means in the heaviest months an average of 680 booklets a day to be put up, addressed, stamped and carried to the postoffice. Our heaviest day in October ran 1,441 requests for booklets, besides calls for plans and various miscellaneous inquiries to be answered. And these are cleared out in one day. Imagine the work, if you will, of opening 1,400 letters, reading their contents, counting and classifying the numberless little remittances, answering the special inquiries, selecting out the possible prospects and after grouping and putting them on the stencil, mailing them out to the list; and carefully addressing all the labels, besides the mere mechanical work of selecting out the booklets requested, weighing, stamping, sealing, and delivering to the postoffice. Our mail is so large in bulk it has to be trucked to the postoffice. In fact, if this work is to go on, we must have more room for storage and mailing and a larger force to handle it.

Reduce Handling Costs

The effect of this accumulating number of inquiries is shown in a very practical way by the reduction in costs per inquiry. Last year the cost per inquiry averaged \$1.92; this year, with a month still to run, it amounts to \$1.13, which means that by the end of the year our inquiry cost will be in the neighborhood of \$1. That is to say, the inquirer pays for a booklet which boosts your product, and you thus get at him with your whole story for \$1. This is the cheapest selling expense you have.

But aside from these results of widespread and growing interest aroused by advertising, and of actual sales of literature made, there are results of a very substantial kind, which are still to be recorded as due to your expenditures. These may be called the accumulated assets of the association in visible and invisible form.

Our visible assets are:	
50 H. of B. Plans at \$200.....	\$10,000
31 Manual Plans at \$200.....	6,200
92 Bungalow Plans at \$250.....	22,500
<hr/>	
	\$38,700
10 copies of Film.....	6,000
Stock of Literature on hand:	
20,383 Story of Brick, at 25c.....	\$ 5,095
16,681 Manuals at \$1.00.....	16,681
84,918 Bungalows at 15c.....	12,737
Part of H. of B at 26c.....	2,000
Post Cards	650
Pamphlets	250
<hr/>	
	37,413
<hr/>	
	\$82,113

But none the less valuable are the invisible assets, those imponderables that are working for you all the time in a vague, indefinite way, in making good will for your products.

Powerful Influence Set to Work

Of the imponderable but powerful influences involved in, and set going by, our advertising campaign, the following should be noted:

1. The effect of nearly two years' advertising thru the best national and trade journals to from 10 to 14 millions of people. This influence will last for several years in bringing requests for your literature and plans.
2. The effect of having with interested people over 186,000 booklets on face brick, such as "The Story of Brick," the Bungalow booklet, the Manual, and house designs in the hands of interested builders, besides innumerable little pamphlets emphasizing the value of face brick.
3. It is not without satisfaction to know that over 450 schools and colleges have sent for our booklets to be used in the

class room, and 123 libraries have asked for our literature to be placed on their reference shelves. All of this has been entirely unsolicited on our part.

4. Our two-reel film on the manufacture and uses of face brick is doing work constantly from nine centers, among thousands of people, during the year, as already indicated. An influence of which you are not aware but going on all the time in your behalf.

Daily Papers Give Free Advertising

5. Then we have working for us practically without cost all the papers that ask for our house plans and run them in their homebuilding sections.

6. The interest cultivated among the unions in carrying on local advertising of their own.

7. The work of Ross Crane of the Chicago Art Institute who has selected a number of our plans and uses them in his talks about what the small house should be architecturally.

8. Articles in papers on the subject of face brick, such as Country Life and the House Beautiful, which features the value of home building to those who have both the inclination and money to build their own homes. You will get a copy of the December House Beautiful with the prize essay in the "Home of Beauty" competition of last spring.

9. Nor is the least thing in imponderable values, that are a real asset to any institution or concern, a smooth running, and efficient organization.

Service Department Made Up of Good Workers

Not only has Mr. Hollowell and his assistants fully and cordially cooperated with the interests and the work of the Service Department, but the personnel of the Department has developed into an earnest and loyal group that takes genuine interest in the work and carries it on with enthusiasm. Gentlemen, you cannot pay in money for this sort of thing.

Besides, it ought to be mentioned in this connection, we have a thoroly competent advertising man in Louis Grilk who not only knows how but faithfully and efficiently does; and a printer, represented here by Mr. Clark, who not only prizes himself on the best artistic work but interests himself deeply in giving to us the best service he can render.

Advertising Committee Worked Hard

And please do not overlook the fact that no small part of our success, whatever it may be, is due to the broad-visioned, intelligent, and freely given time and effort of your advertising committee. I want to say to you that my own personal pleasure and satisfaction in working with these gentlemen can in no way be expressed in words. I am glad also to acknowledge the uniform and cordial support the work has received from the membership generally. I must however insist that I have not always received the response you can give in the way of material for illustrating good brickwork. If you cannot furnish me the illustrations, at least tell me where I can find them.

Advertising Only Beginning

Now, gentlemen, I have briefly reviewed the results thus far in our nearly two years of effort, and whatever appraisal you may put upon them, I cannot believe I exaggerate in calling them a fair start. I pray you, however, do not forget that it is *only* a start. Your industry now has a name and a standing before the American public such as it never had before. You are a great national, going concern. Take pride in that fact and push vigorously to the completion of what you have so well begun.

To accomplish this, I must not disguise from you the necessity, in the first place, of a larger fund to present adequately your case before the American public. To drive an engine up grade it requires so much energy in the form of coal; a less

amount fails to do the work, or is only sufficient to keep the engine from sliding back. The face brick manufacturers of this country should provide enough energy, in the form of money, to push the engine over the top. To do so, you need not only wise and consistent advertising, but *persistent* advertising.

Advertising Must Be Continued

Every year, nay every week, a new generation of buyers is coming into existence, a new stratum of prospects for your material is rising above the surface, and your appeal always strikes them as something new, however, old it may be to you. Your readiest, your most economical and efficient approach to them is thru advertising. The right kind of advertising, in modern business, can no longer be looked upon as an expense. It is a capital investment which continually builds reputation and good will. It makes you known more and more as you can be known in no other way, and puts you in a favorable light before the public: it introduces your product and your salesman, and breaks down sales resistance; and it improves your product and service by keeping you up to a standard which you must more and more fully meet. It gives your industry an ideal toward which you can work and a common interest and cause about which you can rally, and in which you can take pride.

Other Literature Must Be Developed

Besides, as outlined to you four years ago at French Lick, there are still other forms of literature that must be developed in order to present your case, as it needs and deserves, to the building public. And there are other activities, such as technical investigations and data on construction that are much needed to make your service in the building field more complete. There is serious work to be done to put your product in the right light, and to secure more satisfactory results in both perfecting the product and in its efficient uses.

Problems of distribution also press for solution, before you can reap the full advantage of your promotion campaign. Your advertising is already forcing into view the painful inadequacy of selling and distributing methods in the field. Some of you, it is true, have admirable merchandising equipment in your particular territory; but for the field as a whole, your industry is crassly ineffective in gathering the harvest which is now at hand.

Number of Brick Homes Greatly Increased

Thru the advertising not only of our, but of other associations, a great interest has been aroused in the building of homes, for example. Wherever I turn I find a larger percentage of brick homes are being planned and built than ever before. In some communities I am told the percentage of brick buildings for the first time is greater than that of stucco and frame. But many brick prospects are lost because there is no one to answer their practical queries, solve their problems, and lead them to a final decision.

To sum up, you as a great national industry are under way, with a growing momentum; you have a smooth running, efficient organization, you have a field of activity ripe to the harvest; you have a product which for permanency, economy, and beauty is the best all-round building material in the world; and you have before you a period of years that promises a steady, forward-moving prosperity. What will you do, sink into indifference, self-sufficient complacency, and commonplace success? Or, uniting your efforts, will you not rather in a clear and comprehensive understanding of your problem, advance with vision and courage toward the promise and fruition of the coming years, in the confident expectation of putting your industry, where it belongs, at the fore-front of the American building world?

St. Louis Will Be the Mecca of All Common Brick Makers on January 30.

To Those Who Make Face Brick

Pointing Out the Need for Vision on the Part of
the Manufacturer and His Duty to His Industry

By Paul B. Belden

Belden Brick Co., Canton, Ohio, Ex-President, A. F. B. A.

MY TERM as president has been a revelation to me—my intimate touch with the departments of the association has filled me with admiration for the personnel of our staff. In Mr. Hollowell we have a secretary-treasurer who is giving not only the best that is in him but ALL that is in him to the association. Not only is he filling his position, entailed with a great amount of detail, well, but he is keeping in touch with other associations so that any opportunities that will be of benefit to the American Face Brick Association will be recognized early. In addition, he has built up a staff that is full of enthusiasm and ability and will "carry on."

In Dr. Mars, our Director of Service, we have a man who is not only eminently fitted by education and broad experience for the great work he has to do, but one who brings to this work a genuine affection for the product he is promoting. I make the statement now that he is doing more to sell face brick than all the rest of us. The time will come, if indeed it has not already arrived, when the face brick manufacturers will realize their great good fortune in having this man, not only to handle the department in his charge, but to counsel with it in other matters affecting the association and the industry.

Lauds Traffic Committee

To each of these gentlemen I want to extend my grateful appreciation of their help and courtesies extended to me during my tenure of office.

Our Traffic Committee has done a wonderful work—our product has been forcefully represented—our case has been handled to the last detail. I want to thank this committee for its fine work. To Mr. Stringer, the chairman we owe a deep debt of thanks for his untiring efforts and the clear and unselfish understanding of the problem he has shown.

Our Research Committee is sure to develop into one of the most important that this association has ever had. Far-reaching beneficial effects will come out of this most important work. Our interests are in the hands of Messrs. Butterworth, Koch and Owens and they are doing their work well.

A. F. B. A. Put Face Brick Men on Map

In the Book of Proverbs we find the wise Solomon says: "Where there is no vision, the people perish; but he that keepeth the law, happy is he." Does it not seem that Solomon must have had the face brick business on his mind when he said this? "Where there is no vision the people perish." You will all agree that before the association there was very little in life for the face brick manufacturer. In those days there was no vision and our business had scant standing in the business world. There were fortunately a few men left in the industry who had enough spirit to feel that the product deserved a better fate and they, thru hard labor and at great expense, developed vision in others and for a time we were in a position to under-

stand the meaning of Solomon's "He that keepeth the law, happy is he."

All Manufacturers Should Have Vision

But there then came a time when the land was overrun by strangers who had never heard of Solomon's proverb and they muddled the waters so that those who had the vision and kept the law all but lost faith in the proverb or were sore tried as to how to explain the meaning of it so that the strangers would get the vision and keep the law, and this is the position we are in now. Are we going to have vision and keep the law and be happy, or are we going to perish?

To those manufacturers who are not in the association we must make it clear that if we are to create a market for face brick we must promote the product and that this promotion



PAUL B. BELDEN.

costs money and that they should pay their share of the expense. There is an insect in certain parts of Mexico called the alacron. The female of this species gives birth once in her lifetime to a dozen or more infant alacrons who immediately climb upon the body of the mother and subsist upon her until she is no more. It must be made plain that this association is giving life to the face brick business and that those who are not members of the thing that is developing the business are like the young alacrons, sucking the life out of the organization that is feeding them.

In the year just passed this country has experienced the greatest liquidation in its history. Price declines have been tremendous—many lines of industry have suffered beyond com-

Man! Don't Tell Me You Have Not Made Plans to Go to St. Louis.

parison—unemployment has been almost universally bad. The paving brick industry has been one of the lines that has been hard hit and, as a result, many manufacturers of this product have started to make face brick. Also many common brick plants are now making face brick and a number of plants that were abandoned have been taken over by new interests and have started to produce.

Our hope is that, as some of them already have, all of them will join our association and help develop the market to take their production together with our own. Personally my confidence in paving brick is great enough to make me feel that with the coming of lower production costs and reduced freight rates the demand for this product will re-appear and that many paving brick plants now making face brick will resume the production of paving brick. The possibility of this does not relieve the plants of their responsibility to the face brick business and to our association.

Face Brick and Steel in Same Fix

Many lines other than ours have been affected in like manner, the steel business being an example. On account of greatly increased production, the industry is operating only about 40 per cent., prices have declined, almost if not quite, to cost and the market price of the stocks of manufacturers in this line are in many cases less than one-half of what they were a year ago.

It seems strange that a few men whose interests are identical with those of the whole industry should have to work, plead and argue with others in the industry to get them to do things that are so plainly for the good of the industry as a whole. There are those who do not want to continue in or come into the association. Surely they do not feel that the value of their plants will be as great as they are WITH the association.

Are Outsiders Stronger?

It cannot be that they feel they will make more money by operating in an industry with no point of contact between manufacturers. Is it that they feel they are stronger men than those who are in favor of this association and that on account of this strength that they will have greater opportunities outside than inside—I cannot feel that this is the case because if they ARE the stronger they would unite and run this association as it should, in their minds, be run.

There is an old saying and a true one that you get out of a thing whatever you put into it. I ask those who have not signed the association advertising contracts whether they have put into the association all that they should or could. Could not the things that this association has failed to do in your minds, have been accomplished if you had put these things clearly before the membership? Can they not yet be done if this association continues to function? Can they ever be done if this association disbands? Put into this association the best that is in you and you will get out of it all and more than you can reasonably expect.

Urges Men to "Stick" With Association

We must all of us always bear in mind that we are citizens of a country where the majority rules. Sometimes we are not pleased with some of the things the association undertakes or the way it undertakes them and again we may think that the association should undertake things that it has not taken up. We may feel that there are some good reasons why our own particular problems make membership in the association unnecessary or a burden we cannot carry. To all of these points we must answer that if the things that you want are for the good of the majority, the association will do them if you will but state them, and you must realize that the good the association is doing will so lighten the load of your own particular burdens that you can afford to carry your share of expense.

We must each and all of us feel free to discuss among ourselves all matters, that are legal, pertaining to our business, for only thru candor will we be rewarded by receiving the full benefits of this association. The same applies to discussion at our division meetings and to the meetings during our annual convention.

Association Will Go Forward Rapidly

The avenues of effort for this association are broad and well paved, but it takes not only money but time to prepare ourselves to travel all of them. We have a going concern, and a mighty all-fired good one, that has made wonderful strides and is ready to go forward in "seven-league boots," if given half a chance.

The time will never come when all men in the business will belong to it. There will always be men who will feel that their work is well done when they make their brick and sell them; that advertising face brick does not pay; that discussion of costs does no good; that codes of ethics will hamper them in the free use of their wits; that statistics on production, sales and shipments are of no value; that just as low freight rates will be enjoyed without efforts as with it; that they can get along as well without being on speaking terms with the men in their own line of business as they will by knowing them intimately and working with them along lawful lines of mutual interest; that nothing can be gained by seeing that new bricklayers are trained to take the place of those leaving the trade and that more are trained to take care of the increased demand; that being a party to the work of re-writing building codes can be of no use to the industry; that working with the Government investigating manufacturing processes will bring no new knowledge to us. In spite of this opposition, I am sure that this Association will live and will go forward.

A. F. B. A. Will Create Business

By judicious advertising and promotion, it will be the means of making American homes the most beautiful, the most enduring homes in the world. By creating the proper literature, it will create business—a demand beyond our fondest hopes—and with this demand will come profits. By contact with the face brick problems from a national point of view it will broaden the minds of those who stick to it so that they can raise their eyes from the dust of the machine room, the heat of the kiln, and see that there is more, much more, than just this in the Story of Brick. By personal contact it will develop friendships, based upon that thing that develops the greatest friendships, common interests, that will be the source of incalculable pleasure and profit. By personal discussion it will wipe out groundless animosity, and, as a result of personal acquaintance, it will heal ill-will where there have been grounds for it. As a result of these things it will bring order out of chaos—peace out of strife—profit out of loss—good will out of ill-will—create value out of that which is practically valueless.

Law of "Survival of Fittest" Prevailed in Old Days

I was able to survive the old days when the law of the jungle, the survival of the fittest, prevailed in the face brick industry in all of its ghastly, dumb ruthlessness and I shall endeavor to face what is before us again; but just the same you will understand my affection for and confidence in this association and by belief in it when I say to you that I hope my last official act on this earth will be the signing of a voucher paying the then current assessment of this association that the story of face brick the most beautiful, the most enduring, the fullest value material may continue to be told forcefully, lovingly, enticingly to each new generation that comes to people the earth.

There Are No Alacrons in the Clay Industry—Watch the St. Louis Meeting

U. S. INVESTIGATIONS IN CERAMICS

The ceramics industries are of basic importance to the country, and in spite of the fact that many of them are long established they have received comparatively little expert scientific attention. The investigations of the Bureau are therefore of more than ordinary importance and have been gladly received by the industry in general says the Secretary of Commerce in his annual report.

A study has been completed on high-fire porcelain glazes, which are important for making chemical porcelain ware, spark plugs, and pyrometer tubes. The crazing of pottery has been investigated, and it has been shown that probable variations occurring from time to time in the silica content of the clays used are sufficient to account for the occasional recurrences of crazing. A paper is in course of preparation on the solubility of feldspar frits, and an important investigation is nearing completion on the properties of domestic ball clays as compared with those of English origin. This work will enable American manufacturers to tell with greater certainty what results are to be expected from domestic clays.

In cooperation with the National Terra Cotta Society progress has been made on problems relating to the use of architectural terra cotta.

The transverse strength of fire clay under severe conditions of temperature and load has been thoroly investigated, and it has been shown that above 1,300 deg. C. the transverse strength is a negligible quantity from the standpoint of design. American bond clays for glass pots have been investigated in comparison with the Gross Almerode clay, and it has been shown that each kind possesses certain advantages for this purpose. Different combinations of clays and "grogs" have received attention, as well as special material for refractory tubes.

* * *

HOW TO HANDLE DEPRECIATION

"Depreciation—Its Treatment in Production," is the title of a booklet recently put out by the Fabricated Production Department of the United States Chamber of Commerce. The booklet contains very interesting information regarding the need of charging depreciation into every day cost; the relation of insurance and depreciation; adjusting depreciation to production; the controlling effect of obsolescence; the advantage of standard rates of depreciation; how the property ledger operates. It is written from extensive experience and for practical every day use. It will be supplied without charge on request, as it is part of the educational campaign of the Fabricated Production Department.

* * *

ISSUES BIBLIOGRAPHY ON REFRACTORIES

The first bulletin from the American Ceramic Society Refractories Division has been issued under the title "Magnesite and Dolomite Refractories Bibliography." The book contains, as its name implies, a list of papers of interest on the subject mentioned, going as far back as 1873.

It is only the first of the bibliographies which the division will issue. Any and all who have references to the literature on refractories are requested to send copies of them to Ross Purdy, secretary of the American Ceramic Society. The next bulletin will be on silica refractories. Others will be compiled on chrome, sillimanite, alumina, spinel, silicon carbide, zirconia, carbon, clay and special refractories including nitrides and oxides.

* * *

BUILDING ARTISANS SCARCE IN GOTHAM

Shortage of skilled labor is beginning to affect large building erection projects, says the Dow Service daily building report of December 3.

It is also having an unexpected and decidedly unusual effect upon building material prices. As far as demand and supply are concerned the present stability of certain basic building material prices and the upward reach of certain others, generally speaking, fairly well sustained considering the time of the year, but the vast, quite unprecedented late autumn home building and alteration movement, coupled with the fact that hundreds of skilled building artisans have been drawn away from New York to other sections of the country where building work got an earlier start, have so impoverished the supply of competent artisans in the so-called starting trades, that the flow of masons' materials into new building jobs is beginning to back up.

Manhattan masons material dealers call the situation "Palsied." Materials are coming in plentifully enough, but their assembly into structural fabrics is being so retarded as to begin to be felt in some wholesale markets.

Between now and March a vast quantity of the small housing work now finishing will have been completed and even 30 days from now there is expected to be a larger supply of bricklayers, plasterers, carpenters, metal workers, and concrete artisans as these trades give way to the finishing trades.

But even a 30 day interruption of wholesale purchasing of basic materials is a serious thing for manufacturers who are operating this autumn-winter on close production schedules in an effort to keep down costs and avoid excessive taxable inventory. This fact is established by the accumulation of common brick at the wholesale docks and at distributing points.

* * *

CHICAGO SECTION, A. C. S. MEETING

Thirty members were in attendance at the annual meeting of the Chicago Section, American Ceramic Society, held at the Morrison Hotel, Chicago, on Saturday, November 26.

An interesting program was enjoyed by the membership, and included a description of a new method of porosity measurement by E. N. Bunting. Mr. Bunting explained that an apparatus consisting of a graduated glass chamber is used, in which the clay piece is inserted and mercury introduced. The mercury is then withdrawn into a barometer, and by means of two volumes and two pressures the porosity of the piece determined. By this method the porous space is determined to be from 5 to 20 per cent. higher than when the water or vacuum methods are used. This instrument will be described in the November issue of the Journal of the American Ceramic Society.

J. A. Dedouch of the Imperishable Miniature Co. described the manner of photo ceramic work on enamels. He stated that the development of this art in the United States thus far has been practically nil, altho he was of the opinion that potters might do this work as easily as using decalomania, and photographers could also develop this art.

R. M. Onan, of the Carborundum Co., addressed the meeting on the use of carborundum refractories, referring particularly to enamel furnace construction.

Officers for the ensuing year were elected as follows: Chairman, F. L. Steinhoff; Vice-Chairman, B. T. Sweely; Secretary-Treasurer, W. W. Wilkins; Chairman of Program Committee, H. E. Davis; Chairman of Membership Committee, E. A. Brockman.

* * *

BUILDING COSTS CONTINUE TO DECLINE

Building costs in the country declined and the value of business, residential and industrial building rose, the latter by 50 per cent. during the month of November. Residential building was twice as large as a year ago. Orders, production, shipments and exports of lumber were larger than in September. Shipments of brick increased but production and stocks remained virtually unchanged. Cement production for October was the highest on record.

"American Valuation" in New Tariff

Tells Manufacturers at United States Potters Association Convention Fallacies of Present System
Chance for Dishonesty Lessened in New Plan

By Hon. Marion DeVries

Presiding Judge U. S. Court of Customs Appeal

GENTLEMEN of the United States Potters' Association:

I thank you for the compliment of an invitation to address so representative an association of our country's producers and employers of American labor. When, however, the integrity of one's statements upon the assigned subject has been publicly challenged, the obvious preliminary duty is to meet that challenge, that thereafter one's statements may properly be weighed.

In the issue of November 14, 1921, of *China, Glass and Lamps*, a journal devoted to your industries and, I assume, read by all of you, is a statement addressed to the editor which reads:

Boston, Mass., November 3, 1921.

In your issue of October 31, I notice that in your article "Judge Shows Justice of American Valuation Plan," you quote Chief Justice DeVries as stating:

"Indeed no oath whatsoever is required with the declaration accompanying the entry at the Custom House, which, in its present adopted form, is without force or effect."

This is absolutely untrue for no Customs House in the United States will accept an importer's entry without his oath having been taken before a notary public and as I am sure you desire to print nothing but the truth for your readers, I trust that you will print this contradiction.

Truly yours,
Jones, McDuffee & Stratton Corp.,
Theodore Jones, President.

How the Law Reads

Fortunately the sharp issue of fact here made may positively be determined by the language of the pertinent law itself, and the form of declaration adopted by the Treasury Department under that law. The applicable statute is paragraph F of Section III of the presently effective Customs Administrative law. That paragraph in so far as pertinent reads:

"F. That whenever merchandise imported into the United States is entered by invoice, a declaration upon a form to be prescribed by the Secretary of the Treasury, according to the nature of the case, shall be filed with the collector of the port at the time of entry by the owner, importer, consignee, or agent, which declaration so filed shall be duly signed by the owner, importer, consignee, or agent before the collector, or before a notary public or other officer duly authorized by law to administer oaths and take acknowledgments, under regulations to be prescribed by the Secretary of the Treasury."

No Oath Required by Law

Does that statute require the declaration be sworn to, or an oath be taken, before a notary public or other officer? Obviously not. It requires that the declaration be "signed" only before such an officer, and, mark you, particularly permits the declaration to be "signed" not only by the "owner," "importer," "consignee," but also what is here most important, by an "agent."

Here importance is, that the law requires and requires only that this declaration be "signed." It does not require that it be either "sworn" to or acknowledged." Indeed, should the Secretary of the Treasury, acting under this limited statutory authority, prescribe a regulation or form of

declaration requiring that such be either "sworn to" or "acknowledged" a serious question would be raised as to its legality as being beyond his statutory power. The statutes abound with similar requirements, that instruments and papers be "signed" before consuls, courts, notaries and other officers, but by such it is required only and that alone that thereby the subscribing witnesses be of the prescribed dignity and office for obvious reasons. It is not a requirement or an authorization of an oath or acknowledgment, and so it has always been held by the treasury and the courts. Fully cognizant of his legal powers in the premises, the Secretary of the Treasury has prescribed a form of declaration which requires neither oath nor acknowledgment in due execution of declaration upon entry.

Wording of Declaration

I read you the prescribed and uniformly used declaration upon consumption entry, and the much less used warehouse entry declaration differs in no essential particular therefrom.

The former reads:

"I do truly declare that (Name of owner, purchaser, or ultimate consignee). Address (No. Street, City, State). IS THE OWNER, PURCHASER, OR ULTIMATE CONSIGNEE of the merchandise described in this entry, and in the invoice or invoices now presented to the Collector of Customs, and that the said merchandise was imported on the date and in the vessel or conveyance at the port named above; that the invoice or invoices are in the state in which I received them, except as to marginal notations; that I have not received and do not know of the existence of any other invoice, writing, paper, or agreement showing a different price, value or description of the said merchandise, and that if at any time hereafter I discover any error or misstatement in the invoice or invoices now presented, or receive any information, or any invoice, paper, or writing showing a different price, cost, or value, I will immediately make the same known to the Collector of Customs at the port of entry.

Merely Asked to Sign, Not Swear

"And I further declare if this declaration is executed by me as owner, purchaser, or ultimate consignee, that the said invoice or invoices are in all respects correct and true and truly state the price paid or to be paid for all of said merchandise as has been purchased or agreed to be purchased.

"And if this declaration is executed by me as agent, that all of the statements contained therein are correct and true to the best of my knowledge, information and belief.

.....
(Signatures of owner, purchaser, or ultimate consignee.)

.....
(Signature of agent.)

Capacity.....(Title of officer or corporation, member of firm or agent).

Signed and declared to before me on1921...

.....
(Deputy Collector or Notary Public)

Please note that the declarant does not and is not re-

quired to say—I do “hereby swear,” nor—I do hereby “acknowledge,” but, I do truly “declare.” That is no more an oath or acknowledgment than when a testator in his will says, I hereby “declare” this my last will and testament. Note that the same prescribed language is used in the declaration before the consul abroad, to-wit, “I do solemnly declare”; yet no one would for a moment contend such an oath or acknowledgment. And so the notary or deputy collector subscribes the declaration, not “subscribed and sworn to before me” or “duly acknowledged before me” but “signed and declared.”

Now contrast this statute and the prescribed declaration upon an entry for American goods returned. That declaration is printed on the back of the same consumption entry form before read to you, and reads:

“I do solemnly, sincerely and truly swear,” and the jurat of the notary reads “signed and sworn to before me” * * * notary public.

Repeats Challenged Statement

These contrasted forms upon the same entry, precisely indicate the difference, and conclusively show that the declaration upon entry is neither sworn to nor acknowledged, nor so required by the law or regulations.

And even were this prescribed form of declaration made under oath, which it is not, I repeat my challenged statement, that in its presently adopted and used form, it is without any force or effect. I challenge as absolutely untrue the statement of Mr. Jones which I quote: He says: “That no Customs House in the United States will accept an importer’s entry without his oath having been taken before a notary public.” There is, as I have shown, no oath whatsoever taken, and further, the statute and regulations do not require the “importer” himself to do anything, but all these entries and declarations may be and are in the most instances “signed” and that only by an agent of the importer, usually his customs house broker.

Declaration Without Force or Effect

And here is the rub. Here it is wherein, as I have said, this declaration “is without any force or effect whatever.” Note carefully the approval form of declaration required, when made by the “owner,” “purchaser” or “ultimate consignee,” that he declare “that the said invoice or invoices are in all respects correct and true and truly state the price paid or to be paid for all of said merchandise as has been purchased or agreed to be purchased.”

When this declaration, however, is made by an “agent” as it usually is, there is no requirement that he shall especially or at all declare, as in the case of the owner, importer or consignee, “that the invoices are in all respects correct and true and truly state the price paid or to be paid for the merchandise.” But, when made by the agent, he declares only, “that all the statements contained therein are correct and true according to his knowledge, information and belief.”

Chance for Dishonesty

Here we locate the proverbial African in the wood pile. Here it is, as I have said, and repeat, that this adopted form of declaration “is of no force or effect whatever.” For, the importer might have a safe full of false invoices and his letter files be teeming with guilty correspondence, unknown to his agent or broker, with offices miles away and without the slightest knowledge of the true facts of the transaction, or sales, or market prices of the imported articles abroad. And, yet, under this adopted form of declaration, this agent can and usually does make due entry of the goods upon a declaration stating the same is true only so far as he knows, is informed, and believes, the statements are correct. The adopted form charges him with no absolute knowledge of

the value of the goods, or the prices paid for them, or good faith of the transaction in order to enter them. In complete ignorance of the transaction, he is made competent to enter the most fraudulent importation. Any school boy can see that such a declaration made by an agent might be absolutely true, and yet, under it, goods be imported and entered with fraudulent knowledge and purpose on the part of the importer.

Many Declarations Challenged as False

Is it astonishing, therefore, under this system that at the port of New York alone, during the year 1920, 5,987 declarations were challenged by the appraiser as false and the invoices accordingly raised; and that during the month of February, 1921, alone there were 418 such? For my part, I hold that entry should be permitted no imported goods except under oath of the importer or the party importing such, and that, if entered by an agent, that agent should be made amenable by law to the guilty knowledge of the principal.

So I repeat with emphasis that every day millions of dollars of goods are being imported into the United States, without the requirement of a single oath by any person whomsoever, abroad or in this country, and under adopted forms of entry and declarations that are absolutely without any force or effect.

Import Tax Only One Not Requiring Oath

The import tariff is a tax which in all cases here pertinent is levied upon the foreign value of the imported article, and the invoice and entry papers are the tax statements. Why is it then that in all other cases and as to all other taxes in this country, municipality, state and federal, the taxpayer is required to make oath as to values in his tax statements, and not as to import taxes? Is there any reason why we should by law challenge the integrity and patriotism of our own, and admit that of the foreigners? Let us hope, as I confidently believe, that the present Congress will rest the certainty of its import revenues upon the stable basis of American conditions rather than the unrestrained foreign conscience and unverified foreign invoices and ineffective declarations.

But that loose and false challenge of my earlier statement is but in harmony with all the great flood of statements against American valuation with which the country is being deluged by those who are intentionally or recklessly advocating the upbuilding of foreign industries and the employment of foreign labor, as against such patriotic endeavors as are being put forth by your and other organizations and individuals in behalf of American industries and American labor.

American Valuation Plan Does Not Fix Rate

If the controversy were conducted with candor and fairness the principle of American valuation for our imported wares would have no disputants by reason of the single indisputable truth, that it has nothing whatsoever to do with the rate or amount of duties to be paid. It levies no duty. It makes neither a high nor a low nor any tariff. It, does, however, fix a certain, uniform, less defeatible and fraud proof basis for our revenues, and for the duties levied in defense of our industries and labor.

In disguise of the real purpose of the attack, therefore, and in utter disregard and in misrepresentation of the truth of the situation, this proposed basis of duties is denounced as responsible for the rate prescribed. Candid, fair, honest presentation would direct those efforts against the proposed rate, but not the proposed basis of duties.

Editor's Note—This is the first part of Judge Marlon De Vries' paper read before the convention of the United States Potters' Association, December 7. The second part of this address will be printed in the December 27 issue of “Brick and Clay Record.”

U. OF SAKATCHEWAN TO TEACH CERAMICS

A course in ceramics has been established at the University of Saskatchewan, Can. This was done under an agreement between the Bureau of Labor and Industries and the Board of Governors. W. G. Worcester, formerly of the Alberta Clay Products Co., Medicine Hat, but more recently of the Standard Brick Co., Crawfordsville, Ind., has been secured to take charge of the course. This course has been established with the idea of developing commercially some of the valuable and extensive clay deposits in the province of Saskatchewan. In addition to tuition work Mr. Worcester will conduct field and research work under the direction of the Bureau of Labor and Industries. In Saskatchewan there were brick and tile buildings valued at \$8,379,744 erected in 1920 and only \$30,000 worth was made in the province.

Such articles as jam pots, milk jugs, bean jars, mixing bowls and other articles of pottery are now being made of Saskatchewan clays and are finding a ready market in eastern Canada. The raw clay is mined in the province and shipped out for manufacture. If such goods can be marketed successfully as far east as Montreal, it is figured that brick and tile can be made to supply within a few years the Saskatchewan market. Western Canada used well over \$28,000,000 worth of clay products in addition to its share of \$4,000,000 worth of crockery imported into Canada from the United States.

Hon. C. A. Dunning, in charge of the Bureau of Labor and Industries, believes that with practical and scientific men being made available, Saskatchewan's vast clay deposits will be developed.

* * *

DWELLING CONSTRUCTION GAINS IN 1921

There was a decided increase in the construction of dwelling houses in this country during the first ten months of 1921, according to information obtained by the Civic Development Department of the Chamber of Commerce of the United States.

Construction figures furnished by 44 important cities show that during the period from January to October of the present year about \$603,000,000 went into new construction while during all 1920 the total in the same cities was only \$8,000,000 more. During the shorter period this year 57.9 per cent. of the total was for dwelling houses as against only 36.1 per cent. in 1920.

The estimated cost of all construction reported in the 44 cities for ten months of 1921 exceeds \$722,000,000, of which \$349,000,000 is residential, and \$254,000,000 non-residential. Alterations, repairs and special construction cost \$119,000,000. Not only would these totals be increased if all reports were up-to-date, according to the National Chamber, but as costs have been reduced, each dollar this year represents an increased volume of construction.

The total estimated cost reported by the same cities for the entire year of 1920 was \$798,000,000.

* * *

PROTEST HIGH RATES IN OHIO

Ohio manufacturers of vitrified clay tile and similar products are being discriminated against in favor of manufacturers in other states and are being driven out of the market even in western Ohio as the result of the present high intrastate railroad freight rates, was charged in a brief filed recently with the public utilities commission at Columbus, Ohio.

Eleven railroads were complained against by the clay products men and the utilities commission was asked to reduce intrastate rates to a level with the commodity rates under which manufacturers in other states are able to ship their product into Ohio and undersell the Ohio industry. The intrastate rate, they assert, has increased 126 per cent. since 1914 and the freight now

amounts to 30 per cent. of the selling price to the consumer.

Companies making the complaint were the American Vitrified Products Co.; Cambria Clay Products Co.; Dennison Sewer Pipe Co.; Eastern Ohio Sewer Pipe Co.; Evans Pipe Co.; Junction City Sewer Pipe Co.; Logan Clay Products Co.; Robinson Clay Products Co.; Ross Clay Products Co.; Uhrichsville Clay Products Co.; and the Wold Lanning Clay Products Co.

* * *

WILL RIVER TRAFFIC BECOME REALITY?

Whether the Ohio River will become a real artery for transportation again is a question that is of considerable interest at all river cities. For some years past there has been very little movement of brick, even paving brick, by river, due largely to poor facilities for handling. However, the nine foot stage is not far distant, and traffic is now open the better part of the year. There is a proposed fifty million dollar organization to build up freight lines on the Ohio and Mississippi, backed by Louisville, Ky., men. Whether this is a dream or not is a question. Then the Ohio Valley Improvement Association is working hammer and tongs on the matter, and the congress and senators from several of the waterway states that would be affected are planning to make a hot fight for necessary appropriations to carry the work forward.

* * *

DAYS OF PERISHABLE CONSTRUCTION NUMBERED

While a lot of fuss is being made relative to keeping premises clean, and the heavy insurance losses as a result of carelessness, one prominent underwriter of Louisville, Ky., who was formerly an insurance inspector, claims that while this work is good, it is but a question of time before the underwriting companies will force the assured to take action to reduce their losses, thru considerable increase in insurance rates where property is not properly protected.

In this connection he said:

"In many of the more modern houses which are being erected today, the floor between the first floor and basement is of hollow tile or concrete, overlaid with hardwood. That makes the basement fireproof, and it is a fine type of construction. We realize that the small home builder cannot afford expensive construction, but the time is coming when he will be forced to place his furnace in a fireproof room of hollow tile, concrete, asbestos, or something of that sort, with ceiling and walls of fireproof construction around the furnace. In the city, ordinances enforce the use of flue lining in chimneys, but in the country 'they do, and they don't,' but principally don't. Another cause of residence fires is in worn out metal smokepipes from furnace to flue. In only a season or two such pipes have to be renewed, and it is only a question of time when instead of metal, they will be using fire clay smokepipes from the furnace. Metal pipes rust out, heat red hot, and when overheated are likely at any time to set exposed woodwork on fire.

"Many residences which have hot air furnaces could combine the features of pipeless furnace with the pipe furnace, if they would place their furnace inside of a fireproof room, and quit heating their basement, placing a radiator over the furnace, and throwing the heat into their ground floors, which is now wasted in the basement. This could be done by using brick, cement, hollow tile, or some fire resisting material, and placing the entire furnace, except the coal and ash doors, inside of heat and fire resisting material. A great deal of coal would be saved, and at the same time the danger of fire would be greatly reduced. If a fire clay smokestack was used instead of a metal one, the first cost would be the last cost, and a lot of worry and expense would be eliminated."

The Building Situation

"CONSTRUCTION WORK thruout the country is holding up well for this season of the year," says S. W. Strauss of S. W. Strauss & Co. "The building of small homes is proceeding in a gratifying manner."

Building operations in the New England district reached a total of over \$14,000,000 in contract awards during November, and the month of December has opened up with equally favorable prospects. At Boston, building permits are running well over \$2,000,000 a month as compared with less than \$1,000,000 in the summer months. Activities at Springfield have jumped from about \$220,000 in September to over \$1,000,000 a month at the present time.

Common brick in the Boston market is bringing \$17 and \$18 a thousand, delivered, New York stock, with Connecticut production holding at \$21. Water-struck material, kiln run, is priced at \$30, and selected water-struck at \$32, f. o. b., the job. Face brick is selling for \$50 a thousand.

Fire brick, boiler No. 1, is holding at \$60 a thousand, with higher grade material bringing \$70 and \$75. Fire clay is \$25 a ton. Standard sewer pipe is now 50 per cent. off list, with double strength material, 35 off. Flue lining holds at 50 per cent. off list, and wall coping at 45 per cent. discount.

Connecticut Prices

New Haven, Conn., dealers are asking from \$20 to \$24 a thousand for common brick, and from \$45 upwards for face material. Fire brick in this section is around \$75 and \$80, while partition tile, small sizes, is selling from \$160 to \$200 a thousand delivered.

At Hartford, Conn., common brick has declined to levels of \$19 and \$17, with prices at neighboring kilns about \$3 under these figures. Fire brick is close to \$75 for desirable stocks and face brick at a \$50 level.

At Providence

The common brick market at Providence, R. I., shows a fair demand for material at prices ranging from \$20 to \$24 a thousand, delivered. Fire brick, No. 1 standard, has a varying level from \$75 to \$90, while face brick runs from \$45 to \$58 a thousand. Partition tile, 4x12x12 inches, is quoted by local dealers at 16 cents each, and 8x12x12 inch material at 27 cents. Fire clay is priced at \$1.50 a bag. Vitrified paving block, 3½x8½ inch, is selling for \$52 a thousand. Sewer pipe is 40 per cent. off list.

Increase Continues at New York

The present rate of construction at New York is more than four times that of a year ago. In the line of apartments and dwellings, contracts totaling over \$200,000,000 have been awarded up to the present time in 1921, as compared with an aggregate of \$81,650,000 thruout the entire year of 1920. Contracts for this character of construction in November, alone, reached more than \$40,000,000. In seven months in Greater New York, houses have been constructed to accommodate 38,000 families, or at a rate of progress capable of providing for 250,000 persons in a year.

The demand for common brick at New York is excellent and considerable activity is evidenced in the local market. First quality common is selling for \$15 a thousand in cargo lots, alongside dock, with retailers asking \$17.85 for material on the job. Salmon and off-quality brick are quoted from \$13 upwards, and second-hand material is priced at \$45 a thousand per load of 3,000, delivered.

Heavy shipments of Hudson River common are reaching the

New York market, the average weekly cargoes ranging from 35 to 45, with sales running from 38 to 50 cargoes a week. Producers are making the most of the present good weather and heavy barge-loading work is under way at the different yards.

Face brick holds at \$45 to \$53; fire brick at \$75 and \$80. Interior partition tile is priced at 12 cents per square foot for 2x12x12 inch and 3x12x12 inch sizes, 17 cents for 4x12x12 inch, and 19 cents for 6x12x12 inch.

Heavy Activity in New Jersey

The construction totals at Newark, N. J., for the month of November attained an aggregate of \$1,556,709, or more than double the valuation of work in the same month of a year ago, which reached but \$630,748. Apartments and dwellings totaled \$832,800 in valuation during November, covering 74 individual structures to accommodate 162 families. Trenton, Camden, Paterson, Jersey City and other sections are showing a corresponding advance in building operations.

Common brick at Newark is selling for \$20 and \$21 a thousand delivered, while other points in northern New Jersey show slight variation from these figures. At Morristown, \$23 is asked; at Paterson, \$19 and \$20, with similar quotations at Passaic. Jersey City, Hoboken and vicinity have \$20 brick.

There is quite a heavy call for Hackensack brick at the kiln, with price range of \$16 and \$17. The local yards are getting things in shape for the winter season, with fairly ample stacks in reserve.

Sewer Pipe Prices Uncertain

Trenton manufacturers are holding to a price of \$15 and \$15.50 a thousand for common brick at the kiln, while delivered figures maintain at \$17 and \$17.50.

Prices of sewer pipe are rather unsteady and uncertain. The big drop in quotations about 90 days ago, then thought to be an established level for the months to come, have given way to two and three point declines, and generally lower prices for the winter period are now anticipated.

Hollow building tile shows a little improvement in greater price firmness and the inclination to slash figures way below "par" is subsiding; 5x8 inch material is selling for \$100 to \$120 a thousand, while 8x12 inch stock is from \$230 to \$265, delivered.

Building Advances at Philadelphia

The month of November at Philadelphia, Pa., has rounded out a total of \$5,796,675 for construction operations. This is more than double the amount of the corresponding period of a year ago, or \$2,303,445, and is only exceeded by November of 1919. During this month, permits were taken out for two-story brick dwellings in an estimated amount of \$1,102,495, representing by far the feature of local operations and the record figures for any single class of work. The December outlook is equally encouraging.

Lowering building costs at Philadelphia are proving a big aid in the situation according to Col. John Price Jackson, of the local Chamber of Commerce, who says that prices are now about 50 per cent. more than pre-war figures and far below those of the last few years.

Common brick is holding at a \$20 level at Philadelphia, delivered, with second-hand material a strong factor in the market at about one-half this price. Fire brick is selling at \$75 a thousand, while face brick holds around a \$50 figure.

Current Prices of Common Building Brick Six Inch Drain Tile and Hollow Building Tile

COMMON BRICK prices for this month in the various cities listed below show 35 changes. Of these 24 are downward and 1 up. Providence, R. I., which has consistently maintained its price has dropped to \$24. In most instances the changes are but slight either down or up, amounting as a rule to not more than \$1 or \$2. In some southern cities, not listed, common brick is quoted in some instances as low as \$8.

According to some prominent authorities in the business world brick prices have not yet been entirely deflated but must come down some more. This may be possible in some cities but in many sections of the country the margin between profit and loss at present prices is almost infinitesimal.

	Common Brick Per M	Drain Tile (6") Per Ft.	Hollow Tile (5x8x12) Per M
Portland, Me. ....		.15	
Boston, Mass.	17.00	.186	
Providence, R. I.	24.00	.30	
Hartford, Conn.	16.00	.14	
New Haven, Conn.	25.00	.125	
New York City	17.50		117.90
Albany, N. Y.	20.00	.155	200.00
Utica, N. Y.	22.00	.129	
Syracuse, N. Y.	18.00	.125	
Oswego, N. Y.	30.00	.07	
Binghamton, N. Y.	16.50	.105	
Elmira, N. Y.	30.00		
Rochester, N. Y.	16.50	.11	
Buffalo, N. Y.	22.50	.12	95.00
Jamestown, N. Y.	25.00		110.00
Allentown, Pa.	23.50		111.20
Erie, Pa.	25.00	.095	70.00
Philadelphia, Pa.	17.00		
Reading, Pa.	20.00		
Pittsburgh, Pa.	16.00	.12	60.00
Scranton, Pa.	20.00	.14	
Newark, N. J.	21.00	.1675	110.00
Paterson, N. J.	18.00	.17	
Trenton, N. J.	17.00		
Wilmington, Del.	22.00		85.00
Washington, D. C.	18.00	.11	110.00
Baltimore, Md.	21.00†	.14	
Norfolk, Va.	16.00	.12	
Richmond, Va.	20.00	.125	
Huntington, W. Va.	18.00	.12	85.00
Fairmont, W. Va.	27.00	.10	75.00
Wheeling, W. Va.	21.00	.09	65.00
Atlanta, Ga.	12.35*	.11	
Miami, Fla.	25.00		180.00
Tampa, Fla.	18.00		120.00
Louisville, Ky.	18.00	.084	92.60
St. Petersburg, Fla.	17.00		120.00
Lexington, Ky.	19.00	.11	80.00
Memphis, Tenn.	14.00	.09	90.00
Nashville, Tenn.	15.00	.14	109.50
New Orleans, La.	15.00	.12	

Editor's Note.—The prices of the commodities listed above are reported as delivered on the job, and are, therefore higher than the plant prices. These prices are obtained from a sister publication, *Building Supply News*, and are sent to this paper by dealers in the various cities listed. *Brick and Clay Record* will appreciate any corrections. The prices marked in heavy type denote changes from last list.

Prices of six inch drain tile remain quite steady, only four cities showing change. Boston, Green Bay and Portland raised their price, while Milwaukee dropped one cent. According to reports received the Boston price has been raised from \$0.1024 to 0.186.

Hollow tile during November registered price increases in eight cities and declines in 12. Fluctuations were in most cases not very great, the increase or decrease in most cases being about \$5 per thousand. Moline and Peoria, Ill., are now running a close race for lowest price in the 81 cities listed. The Moline price is lowest at present at \$48.50 with Peoria just behind at \$49.

	Common Brick Per M	Drain Tile (6") Per Ft.	Hollow Tile (5x8x12) Per M
El Paso, Tex.	16.00		90.00
Houston, Tex.	21.00	.18	95.00
Dallas, Tex.	20.00	.20	95.00
Little Rock, Ark.	12.50*	.15	
Oklahoma City, Okla.	17.00		90.00
Cincinnati, Ohio	18.00*	.09	68.00
Cleveland, Ohio	14.00	.076	50.00
Columbus, Ohio	16.50	.08	
Toledo, Ohio	15.00	.082	70.00
Detroit, Mich.	16.85	.12	79.00
Evansville, Ind.	14.00	.045	60.00
Fort Wayne, Ind.	18.00	.07	70.00
Indianapolis, Ind.	16.50	.12	67.50
South Bend, Ind.	20.00	.04	100.00
Terre Haute, Ind.	17.00		
Bloomington, Ill.	20.00	.09	75.00
Chicago, Ill.	12.10	.10	59.00
Moline, Ill.	19.00	.11	48.50
Peoria, Ill.	14.50	.12	49.00
Green Bay, Wis.	14.00	.08	105.00
Milwaukee, Wis.	15.00	.08	60.00
St. Paul, Minn.	18.00	.09	75.50
Davenport, Iowa	17.50	.10	113.00
Des Moines, Iowa	20.00	.10	85.00
Sioux City, Iowa	19.50		90.00
Kansas City, Mo.	22.00	.0625	100.00
St. Louis, Mo.	17.00	.15	75.00
Lincoln, Neb.	17.00	.10	73.50
Denver, Colo.	14.00		85.00
Butte, Mont.	19.00		15.00§
Los Angeles, Calif. ....		.0975*	100.00§
San Diego, Calif.	19.00	.14	120.00
San Francisco, Calif.	17.00	.065	112.00
Portland, Ore.	17.50	.10	95.00
Seattle, Wash.	18.00	.10	110.00
Cheyenc, Wyo.	22.00		
Winnipeg, Man.	19.00	.15	105.00
Toronto, Ont.	18.00	.11	
Halifax, N. S.	20.00		
Quebec, P. Q.	22.00	.115	

*Little Rock, Cincinnati, Los Angeles, Atlanta, f. o. b. cars.
 †Philadelphia, Baltimore, f. o. b. job, manufacturers retail price.
 §Los Angeles, Heath tile; Butte, per ton at yard.
 @Hollow tile, Houston, car loads.
 *Common Brick, Baltimore, f. o. b. job.

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

WASHINGTON MEETING GIVES POTTERS NEW LEASE ON LIFE.

THE United States Potters' Association during its 43rd annual meeting which closed at the New Willard Hotel, in Washington, D. C., Thursday, December 8, passed thru a reconstruction period, and emerged a bigger and better organization than ever. A journey thru the ceramic department of the United States Bureau of Standards is one cause of the breath of new life that has been injected into the work of the association. Then, too, the members heard so many messages of a constructive character from those learned in their profession that at once the sole thought of the individual was "We'll awaken and proceed to better, greater and higher things," this meaning of course the betterment of bodies and glazes, standardization of sizes and improvement of operation methods. To say that the entire list of active members have been enthused as never before, is expressing the situation but mildly.

President Salisbury, in his opening address, deplored the practice which obtains among foreign and to a small extent among domestic manufacturers, of copying designs and decorations. He also spoke against the senseless price competition and suggested methods to provide for reasonable stability in prices.

Important Address on Tariff Questions

Dr. S. W. Stratton, of the Bureau of Standards, opened the eyes of the members of the association when he hinted at the possibilities confronting American pottery manufacturers, and when the Hon. Marion DeVries, presiding judge of the United States Court of Customs Appeal, gave his observation on the "American Valuation Plan" suggested and now before Congress, the manufacturers were more enthused than ever. Judge DeVries' speech was a masterpiece and of the most vital importance to manufacturers in America. It was the chief topic of conversation among delegates and interest in the topic was aroused to such a pitch that Congressman Fordney, chairman of the House Ways and Means Committee, was asked to address the meeting.

While at the Bureau of Standards, the suggestion was made that pottery manufacturers appoint a committee at once to act in an advisory capacity with the Bureau in forming standards for American hotel and dinnerware. The association then decided to discontinue its materials committee and appointed a research committee composed of technical men, to work with the Bureau of Standards, and of which A. V. Bleininger, of the Homer Laughlin China Co., was appointed chairman. Other members of this committee are F. K. Pence, Knowles, Taylor & Knowles Co., East Liverpool; Ira Sproat, Sebring Pottery Co.,

Sebring; C. E. Jackson, Warwick China Co., Coshocton; C. H. Walker, Homer Laughlin China Co., East Liverpool; John S. George, W. S. George Pottery Co., East Palestine; James M. Smith, Newcastle Pottery Co., Newcastle, and Samuel B. Larkin, National China Co., Salineville.

New Officers Elected

The officers of the United States Potters' Association for the ensuing year are as follows:

President, Frank P. Judge, National China Co., Salineville; first vice-president, B. E. Salisbury, Onondaga Pottery Co., Syracuse; second vice-president, Ray Y. Cliff, Saxon China Co., Sebring; third vice-president, John B. McDonald, Knowles, Taylor & Knowles Co., East Liverpool; secretary-treasurer, Charles F. Goodwin, East Liverpool.

T. A. McNicol, of East Liverpool, was elected chairman of the Executive Committee and W. E. Wells, of the Homer Laughlin China Co., reelected chairman of the Labor Committee. Mr. Larkin was made chairman of the Manufacturers' Cost Committee and R. H. Pass, of the Onondaga Pottery Co., Syracuse, heads the Kiln and Fuel Committee.

Labor Committee Report

Mr. Wells, of the Homer Laughlin China Co., East Liverpool, in presenting the report of the Labor Committee, states that 1921 was less fraught with labor troubles than other years in the past. Labor in the pottery industry was employed more steadily than in most other industries, due in large measure to the fact that many pottery companies stocked their product rather than close down and throw their employes out of work.

Vigorous efforts were made thruout the year to restore the quality of product and workmanship which had suffered during the war period of labor scarcity. The results of these efforts were the formulating of a list of 38 propositions for improved workmanship and elimination of waste, by the Labor Committee. In a meeting of brotherhood officials and manufacturers' representatives held subsequently, the 1921 agreement, with which potters are familiar, was drawn up.

Sincere regret was expressed on behalf of the United States Potters' Association, by Mr. Wells, for the resignation, because of ill health, of Edward Menge as president of the National Brotherhood of Operative Potters.

Nine New Members Taken Up

The Membership Committee, thru its chairman, Charles C. Ashbaugh, reported that nine members had been received into the association during the year.

T. A. McNicol, in presenting the report of the Western Discharge Committee stated that this committee was practically jobless during the year, very few cases having come up for action by the committee.

No unusual events came to the attention of the Eastern Health Committee, stated John A. Cambell, of the Trenton Potteries Co., chairman. Following the reading of Mr. Cambell's report, William Mushet, inspector for the trade as a whole supplemented his remarks. Mr. Mushet said that potteries are constantly striving to make their shops sanitary and

healthy places to work and many improvements have been made during the year.

The hospital treatment fund has been doing splendid work and several serious cases have been successfully handled. The sick and old age pension system has not as yet been recommended for adoption by the association. Several individual concerns, however, have adopted it on their own initiative.

Working for Lower Freight Rates

The Transportation Committee, thru its chairman, F. B. Lawrence, stated that it is making an effort to have the raw materials, clay, flint, and spar, placed in lower classifications with other commodities enjoying more favorable rates, which are similar in commercial value and character from a rate making point of view. The position of the industry has already been presented to the Interstate Commerce Commission. The main work of this committee is to secure an adjustment of rate inequalities now existing.

An abatement of storage charges or a modification of rules has been asked for, as has also a dunnage allowance on all bulk packed cars of earthenware. It was stated that the Transcontinental Freight Bureau was quite willing to grant the reduction on earthenware and it only remains for the higher authority, the Interstate Commerce Commission, to approve the matter when presented.

Gives Survey of Domestic Materials

A. V. Bleininger, chairman of the Materials Committee, made a splendid report on the availability of domestic raw materials. Mr. Bleininger's report was a comparative survey of the extent and value of domestic materials and will be published in an early issue of Brick and Clay Record. The Materials Committee suggested that a systematic study of the raw materials be inaugurated thru:

1. The collection of information already available in published records.
2. The digesting and summarizing of data obtained from individuals.
3. Cooperation with the Whiteware Division of the American Ceramic Society and the Committee of Standards of the same organization.
4. The urging of further and more specific work by the Federal Bureaus on the ceramic resources of the country.
5. The carrying out of shop tests of materials and mixtures to be specified by the committee, so that certain results may be checked and verified.

Discuss Cost Accounting

The report of the Manufacturers' Cost Committee, made by Frank P. Judge, secretary of the National China Co., Salineville, Ohio, stated that practically all pottery manufacturers were very much interested in the subject of proper cost accounting. The report gave the experience of the Onondaga Pottery Co., Syracuse, N. Y., in putting into use a cost system in 1916. Of 259 articles upon which costs were computed, 192 were found to be profitable when sold at the prevailing discounts, the rate of profit ranging from 1 to 60 per cent., while the remaining 67 items showed a loss of from 1 to 89 per cent. on sales price.

The convention as a whole can undoubtedly be considered one of the most successful meetings which the potters ever held. Many new and interesting phases were brought out, convincing the manufacturers that the days spent at Washington were highly profitable.

* * *

PREPARE STANDARD TILE SPECIFICATIONS

After more than two years of preparation, the Associated Tile Manufacturers have published basic specifications for tile work,

and related documents. Copies of these works will be distributed to the professions and all those interested.

This is a great work and should prove a blessing for architects since it makes their work in specifying tile much simpler. It has been published with a view to simplifying every architect's practice with respect to the use of one product and all collateral matters connected with the installation of that product.

The use of the sheets furnished in connection with the Basic Specification are made considerably easier by means of various colored sections. Printed on white paper, are specification paragraphs suggested for rewriting into the architect's specification for tile work, printed on yellow paper. The writing of these, as printed or revised, in an architect's specification, automatically carries with them those portions of the Basic Specification which are applicable to the types of construction contained in the building or other structure to be erected. Schedules printed on yellow sheets define the kinds, extent and locations of the tile installation in a building.

Printed on green paper are paragraphs for possible modifications of the basic specification for tile work. Certain paragraphs are offered for consideration in connection with the work of other trades and are printed on pink paper.

The Basic Specification gives in detail the procedure to be followed with respect to any kind of tile installation in connection with practically every type of construction. It thus covers a complete tile installation in what might be termed a composite structure with various features of construction and equipment. The Basic Specification aims to describe an acceptable standard for best practice in tile setting.

Members of the architectural profession, engineers, representatives of the different branches of the government, other technical experts, tile manufacturers, contractors and tile setters, all of them, thruout the country, have contributed to and greatly enhanced the value which this publication possesses.

D. Kniekerbacker Boyd, well-known Philadelphia architect, acted as consulting architect and directed the compilation of the Basic Specification, prepared the Related Documents and Index and acted as collaborating editor of the publication. Great difficulty was experienced in preparing this work so that it would be fully applicable to local conditions and to materials available in various sections of the United States and Canada.

* * *

FIND POTTERY IN INDIAN MOUNDS

The Cahokia Indian mounds near East St. Louis, Ill., have recently been the scene of some interesting discoveries. Professor W. K. Moorehead, who is conducting an exploration of the mounds, has announced the finding of fragments of inlaid pottery and various relics made of burned clay indicative of religious ceremonies. Some of the pottery was suggestive of sculpture and bore a near-glaze, indicating that these mound builders were further advanced in the art than their contemporaries in other sections of the country.

* * *

ENGLISH TO CUT WAGES 25 PER CENT.

According to private advices received during the last few weeks, there has been no change in the differences existing between the employes and the English pottery manufacturers. The latter have issued notice of their intent to decrease wages 25 per cent., and to this proposition the employes have entered strenuous objections. The manufacturers have given 30 days' notice of their intent, and whether the rejection of the proposals will result in a decreased production in the Stoke-on-Trent potteries remains to be determined by the future.

DEVELOP "NON-SKID" FLOOR TILE

A "slip-proof" tile, which it is believed will very materially reduce the number of accidents due to persons slipping on tile floors or stairs, is being produced by the Norton Co. of Worcester, Mass. Alundum Safety Tiles is the name of the new product. The company began experimenting along this line about four years ago, but press of business during the war period halted the work for a time, and it was only quite recently that the experiments were resumed and the making of the tiles started. The manufacture of the tiles, the company announces, will in no way interfere with the making of grinding wheels which the company long has manufactured. The new product will be in the nature of a sideline.

* * *

BEAUTIFUL TILE WORK IN "MOVIE" THEATRE

What is probably the most luxurious picture theater west of Chicago was opened in San Francisco, Cal., November 17. It is happily named the Granada and represents an investment of more than \$1,000,000. The building is in Spanish-Colonial style and equipped throughout like a king's palace. One of the most distinctive features of the Granada is the work in colored tiling in the facade around the great windows. This work was done by Eri H. Richardson of San Francisco, who has scored a triumph which has caused most favorable comment among architects of this city. Some go as far as to say that the facade tiling is not unworthy of some of the great masterpieces of the fifteenth century, the materials being translucent, turquoise blue, golden luster, rose and iridescent hues. The tiles were made by Richardson from original designs, the motif being California fruits and flowers. The original suggestions were offered by a Moorish pattern of a design in the Alhambra and these were supplemented by color ideas obtained from the workings of a kaleidoscope. The two fine towers of the facade are distinctively characteristic of the Spanish-Colonial churches in Mexico, and are laid in a herringbone scheme of yellow enameled tiles with blue dots, and offer a brilliant bit of color to crown the rich polychrome beauty of the whole design.

* * *

STUDY FUSED CHINA CLAY

At the Northwest Experiment Station of the Bureau of Mines at Seattle, Wash., an examination has been made of the fused English china clay. During the fusion of this clay considerable material, containing 20 per cent. alumina and 80 per cent. silica was volatilized thus pointing to the possibility of reducing the silicon content of the clay by electrical fusion. The fused clay was crushed and briquets were made for load testing at high temperatures. The study of whiteware clays is being continued.

* * *

JACKSON CHINA STARTS AGAIN

The Jackson Vitrified China Co., of Falls Creek, Pa., after being idle since early in the year has resumed operations, following a reorganization of the company. While the quality of the company's first kiln is said to be commendable, efforts will not be relaxed until the production has reached the point of perfection.

The Jackson Vitrified China Co., unlike other manufacturers, is confining its efforts to underglaze decorations, as it believes it will be only a matter of time until users of this grade of ware will prefer it to other lines of decorated hotel china ware. Pretty print designs hand linings, with individual badges and crests will be featured by the Jackson plant. Business is in active receipt, which indicates that the policy of the firm has

met with the approval of the trade using this line.

Some changes have resulted in the personnel of the company and its plant roster. W. H. Jackson, of Wheeling, W. Va., has retained the office of president and general manager. He is a former student of Alfred University, Alfred, N. Y., where he spent several years in the study of clays, glazes and color formulas. He also at one time was in the color business, later going with the Warwick China Co., of Wheeling. He is a brother of C. E. Jackson, head of the Warwick.

Frank Schwem, an active business man of Falls Creek, has succeeded Frank Patterson as secretary-treasurer and office manager.

Daniel Killinger, formerly of Evansville, Ind., and well known in the pottery trade at East Liverpool, Ohio, and later in charge of the clay shop at the New Cumberland, W. Va., pottery is plant superintendent and in charge of production.

Forrest McCall is in charge of the selection and shipping departments, while E. A. Fitchel is the efficiency expert.

* * *

U. S. CLAYS MAKE BETTER CRUCIBLES

The United States Bureau of Mines investigations at the Ceramic Experiment Station at Columbus, Ohio, indicate that some American clays will yield products closely approaching the English china clay. At the same station it has been demonstrated that better graphite crucibles can be made with the use of domestic bonding clay than have hitherto been made with imported clays.

* * *

STOCK CONSIDERABLE FOREIGN WARE

Philadelphia, Pa., dealers in pottery, chinaware and so forth, have stocked heavily in the line of Florentine, Czechoslovakia and Japanese crockery for the holiday trade, with prices averaging about 50 per cent. below the levels of a year ago for the first two mentioned, and from 20 to 25 per cent. in the case of Japanese goods. American products are at appreciably higher figures, with noticeably less marked decline. There is also a fine showing at the local establishments of chinaware from France, Italy and Germany, as well as a variety of pottery products, including flowers, bowls, boudoir sets, vases in amber and iridescent effects. A variety of Cantageli china is available and Florentine terra cotta specialties, as well as Venetian glassware.

* * *

CHANGES IN BEDFORD CHINA CO.

Changes in the organization of the Bedford (Ohio) China Co. are contemplated by the board of directors, following the resignation of C. B. Reddrop as secretary and member of the board. The board will meet before the end of the year to confirm new appointments.

Meanwhile greater progress toward upbuilding of production and extension of its operations are planned by the Bedford, according to Harry Bailey, general manager. Production has been increased in the last few weeks to 70 per cent. of capacity. A new glazed decalcomania decoration for vitrified china is being made. A new decorating shop has just been completed and a new glassware shop is nearing completion and will be ready for production sometime in December.

* * *

RUSHING WORK ON ZWERMAN PLANT

The foundations and floors are completed for the two end extensions to the plant of the Zwerman Pottery Co., located at Robinson, Ill. Contracts have been awarded for the balance of the work, which will be pushed rapidly to accommodate the increasing business coming to this plant.

The Superintendent

Helpful Hints for Practical Men
Whose Problem is Maximum
Production with Minimum Cost

TYPES OF SERVICEABLE STORAGE RACKS

We show herewith three styles of storage racks for heavy iron, lumber, pipe and so forth. Referring to sketch A, simply bore some holes in sturdy upright timbers at an angle as indicated, insert short pieces of pipe of suitable length in the holes as shown, fasten the vertical timbers both at the top and bottom, and you have a good serviceable rack. By boring holes from diametrically opposite sides and having "shelves" on both sides, it is evident that the rack is more liable to be properly balanced than where one side is used only.

In sketch B the timbers are formed in the shape of the letter A, and crossbars placed at different levels as shown, so that material can be placed between the timbers. In this style of support the timber is not fastened to the ceiling or roof, and therefore it is better adapted in rooms having a high ceiling or uneven roof. At the points where the timbers touch the floor, it is necessary to place cleats in order to assist the cross braces in preventing the timbers from sliding on the floor.

The rack shown in sketch C is practically the same as the one shown in A, except that the pins on the inside are replaced by cross braces running from one upright to the other. The frames shown in B or C are stronger and will hold more material than the rack shown in A, but they are open to the objection that there must be room endwise to place and take out the material that is put into the racks. The outsides of the racks B and C can be supplied with pins the same as rack A for short lengths.

Two or more of these uprights placed at distances of six to ten feet can be arranged to hold practically any length of material.

The timbers for these uprights should be 4"x4", and the cross braces shown in B and C should be 2"x4" or 2"x6" lumber.

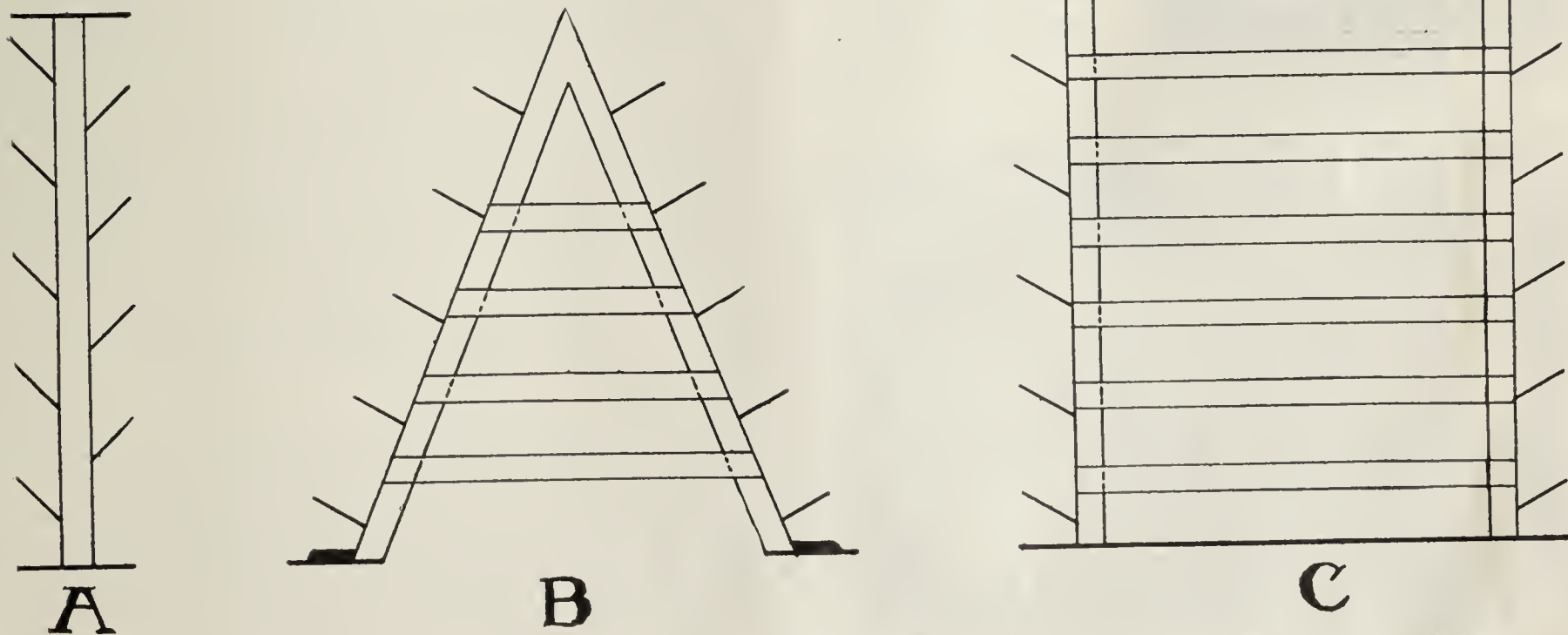
COLOR EFFECT OF REDUCING CONDITIONS

The accompanying picture is a very good example of the result of reducing conditions in burning face brick. We broke a corner off of the brick to show the results, and the contrast would be more noticeable if it were reproduced in color. The gray core is a beautiful red, and the outside surface about one-half inch deep is brown-black.

The following method of producing brick of this class is copied from instructions of the Ceramic Department of the University of Illinois.

"The color of the brick will depend upon clay and conditions of kiln. Buff burning clay and light burning buffs require a good clean oxidizing condition in the kiln. The speckle is brought about by a slight increase in temperature. To produce gold brown colors the kiln is fired alternately reducing for from two to six hours and then fired oxidizing for a similar period. The more often you change, the darker the color will be, also the brown shades are darker or lighter as the color period of the burn is reducing or oxidizing. When very dark brown or black color is desired extreme reduction is required. In case of a red brick when we produce reducing conditions in the kiln the red oxide becomes black or brown. In this condition the iron has the property of combining with the clay forming ferrous silicate and reduces the melting point considerably. It is necessary to get ferrous silicate to get permanent black or dark colors. In order to get this ferrous silicate a certain minimum temperature is necessary, and this is the reason why many red burning brick will not make black brick safely in the kilns. A few shales will stand the temperature necessary for producing the black brick.

"There are two things necessary for obtaining dark brick from red burning clays. 1. Time. 2. Temperature. Long periods of reduction of 30 hours at low temperature or a



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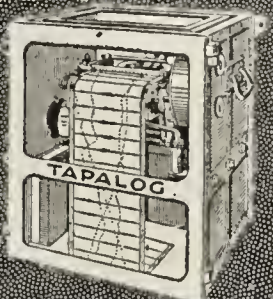
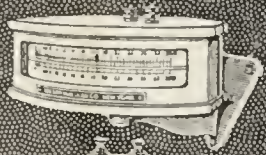
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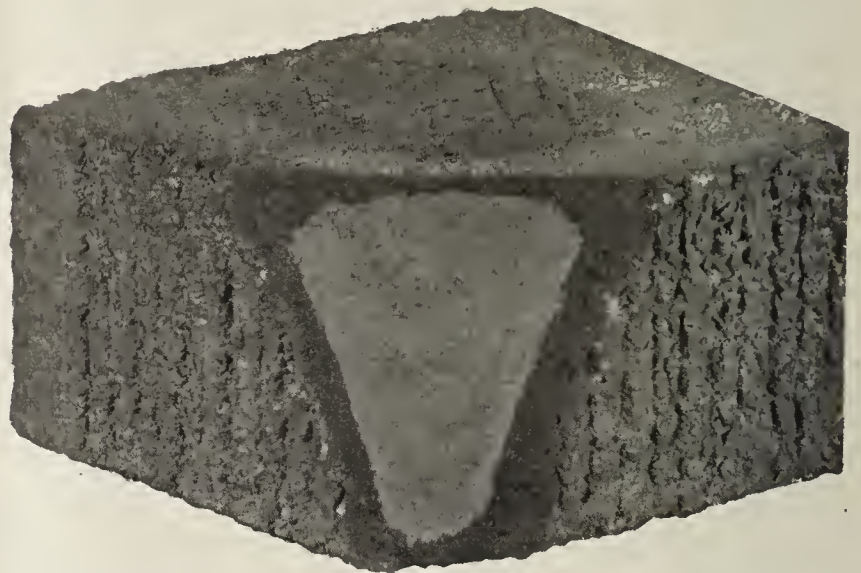
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short reduction at high temperature. The latter is dangerous to low burning clays because of the danger of over-burning. It will also produce but a thin film of dark color liable to easy reoxidation, thus not giving a dark color at all. The former method allows various shades to be made by controlling the time and all variations between two extremes is used on the clay. The common danger of too long a reducing period at a long time is a dirty, muddy, discolored face, due to dirty fires. The results from flashed kilns are classified as follows: 1. All red with various shades. 2. Whole kilns having run of shades from red to



The Corner Broken from This Brick Reveals a Fine Example of the Effect of Reducing Conditions in the Finishing Stages of a Burn. The Center is a Fine Red and the Edges at the Surface a Perfect Black-Brown.

light brown. 3. Kilns giving high yields of dark brick. 4. Kilns giving large production black borders and red centers.

The method for controlling kilns to produce reduction is to carry a low draft and fire often. If the kiln is smoky for 20 minutes of each half hour and the fire heavy enough for fuel to last one-half hour, you have a slightly reducing condition. If fired heavy enough for fuel to last an hour and have continuous smoke for 30 to 40 minutes, you have a heavy reduction. In addition to this, if the damper is lowered until smoke is coming out of the peepholes and other cracks in the kilns you have extreme reducing conditions.

* * *

VALUABLE CONSTRUCTION INFORMATION

Three bulletins have recently been issued by the University of Illinois, the first (No. 121) on the "Volute in Architecture and Architectural Decoration," which contains a discussion of the origin and development of the spiral in the field of architecture and art; the second (No. 122) entitled "The Thermal Conductivity and Diffusibility of Concrete," which deals with the experimental work carried on with the object of determining these properties for a number of specimens representing certain standard mixtures; and third (No. 123), "Studies on Cooling of Fresh Concrete in Freezing Weather," which deals with experimental work carried on with the object of obtaining data on the length of time required for concrete of a given temperature to lose its heat and become cold enough to freeze when it is exposed to temperature lower than the freezing point of water.

The last named bulletin is very timely because of the momentum given the agitation which is aiming to lengthen the season of construction activity and to decrease the term of seasonal unemployment in the construction industry. Interested parties can obtain copies of these bulletins for a small charge by applying to the Engineering Experiment Station of the University of Illinois.

Questions and Answers

Best Authorities in Every Clay Working Branch Are Called Into Consultation—Their Advice Is Free to You, Thru These Columns

Address all communications intended for this department to "Editor Questions and Answers, care of Brick and Clay Record," Chicago.

OVERCOMING MOISTURE IN RAW CLAY

1,010. *Nova Scotia*—We have at present a drying problem on our hands, and are writing you in the hope that your varied experience in these matters may aid in arriving at a satisfactory solution of same.

We manufacture fire clay and silica cement in limited quantities for our own use. As we have no adequate facilities for raw material, it is necessary to use material that has been exposed to the weather and in the rainy seasons we have found it impossible to pass the finely ground clay or silica cement thru the screens. Screens in use in our plant are 24 mesh Newago type. It appears to us that the only satisfactory way out is to dry the material when required. The capacity of the plant is about five tons per hour and we need 125 tons of fire clay cement per month and 100 tons of silica cement per month, so that the operation is intermittent.

The raw materials used are mainly fire clay and silica brickbats. The former varies in size up to lumps 12 inches square by 4 inches thick. The silica brickbats are broken pieces of silica brick generally about four inch cubes. It is possible that these materials would need a preliminary crushing before drying.

There is about eight per cent. of moisture in the clay and, eight per cent. in the silica brickbats. The permissible amount of moisture in both materials is two per cent.

As the capacity is not large and the dryer is needed for wet seasons only, we are naturally not disposed to invest largely, especially in view of the intermittent service required. We would be obliged if you can offer any suggestions or put us in touch with some reputable manufacturers who could quote on satisfactory drying equipment.

On page 573 of the October 18 issue of Brick and Clay Record there appeared an article describing how a condition somewhat analogous to the above was met by the installation of simple equipment. A clay with 20 per cent. moisture was successfully ground and screened with the equipment described in that article.

The installation of a steam heated pulverizer and steam heated screens such as described in that article may be of greater expense than this subscriber desires to make, in which event he might try to arrange to use a vibrating screen, of which there are several types on the market giving satisfactory service.

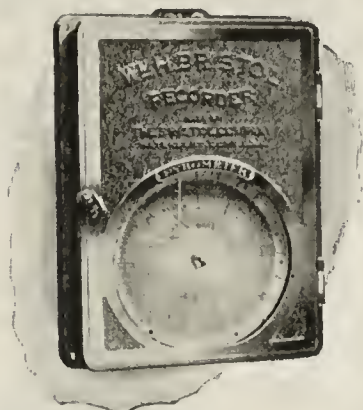
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VALUE OF SAND AND CLAY LAND

1,011. *Illinois*—Can you give me any reference to literature bearing upon the valuation of clay and glass sand deposits similar to those occurring in Missouri, Michigan, Illinois and other states? I would particularly like to get the value per acre or a royalty value upon the tonnage basis.

We do not know of any literature bearing on the royalty value of clay or glass sand. Our latest information of the St. Louis district was a royalty of eight or ten cents per ton on fire clay that is mined underground. We also believe that this

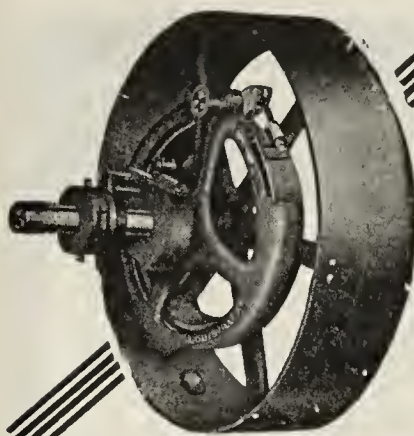
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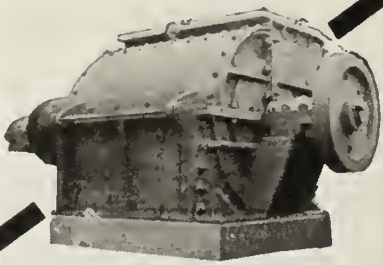
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BARNESVILLE OHIO

figure obtains in the flint clay deposits of northern and central Missouri. The fire clay that is mined in northern Illinois around La Salle and Ottawa has a royalty value of five cents per ton.

The only information that we can obtain on the sand royalty is in the northern Illinois district around Ottawa. Crude sand that is not washed or refined and used chiefly in steel foundries carries a royalty of five cents per ton. Most of the glass sand property is owned by the operators, so that it is hard to arrive at any figure on a royalty basis. This white glass sand generally is about 40 or 45 feet deep, and they can obtain 80,000 or 100,000 tons per acre. The transactions in this property vary considerably, due to the proximity of the property to the city and also its accessibility to a railroad switch, or whether or not it is in demand by two or three parties who own adjoining property. There is a high record of a payment of \$4,000 per acre for one piece, but this was exceptional.

Other transactions have been made at \$600 or \$700 per acre.

* * *

The Letter Box

A Place Wherein Letters
That Have General Interest
Are Published
and Commented Upon

IOWA WASPS BUILD PERMANENT HOMES

The following photograph and letter was received from H. R. Straight, secretary and general manager of the Adel (Ia.) Clay Products Co., describing an interesting phenomenon occurring at that plant recently:

Enclosed you will find photograph of vitrified wasps nests. Perhaps you did not know that Iowa wasps have an eye to-



Realizing the Value of a Permanent Home These Iowa Wasps Built Their Homes of the Same Material of Which Adel "Irontile" Is Made.

wards building their homes permanent and naturally, being of so much greater intelligence than any other wasps, select the same material as is used in making Irontile.

Not only did the wasps select the best material in the world but they chose as a foundation, material that will last for ages.

If the people of this country would select as permanent material to build with as these wasps have, we venture to say that business would be good for everything.

In the Wake of the News

Being Brief Mention of a Host
of Interesting Happenings in the
Varied Fields of Clayworking

DEATH OF GEORGE WAUGH

George Waugh, Verplanck, Westchester County, N. Y., a well known brick manufacturer, for the past few years retired, died, November 20, at the age of 70 years.

C. B. VER NOOY DECEASED

Charles Brennon Ver Nooy, aged 60, husband of Katherine Crandall, father of Winifred, died November 10 at Ocean Springs, Miss. Mr. Ver Nooy was for many years vice-president of the Illinois Brick Co. He was very well known throughout the industry.

J. F. TOWNSEND PASSES AWAY

John F. Townsend, aged 78, for a number of years prominently connected with the Robinson Clay Products Co., is dead at Akron, Ohio. He leaves his wife and one sister. The body was returned to Akron from Washington, D. C., where death occurred, and interment was made in Akron.

S. E. ISGETT FALLS FROM KILN

S. E. Isgett of Gilbert, La., about two months ago had the bad fortune to fall from one of his kilns, resulting in rather severe injury. Mr. Isgett is just getting around a little now with the help of crutches.

NEW CONCERN TO WORK ALABAMA DEPOSIT

Following the discovery near Maxwellborn, Ala., in the central part of the state recently of brick shale said by experts to be of very high grade, a new company is being formed at Anniston, Ala., by H. F. Trammell, a prominent business man of that city, to establish a plant for the manufacture of finished brick. Recent tests of the shale by experts are said to show it to be of excellent quality. Most of the capital for the proposed company has already been pledged and announcement of its plans will be made by Mr. Trammell within a few weeks.

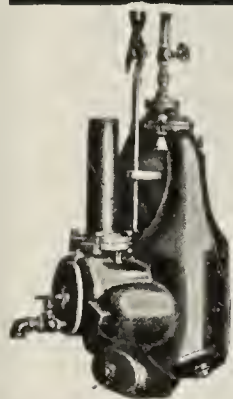
BIRMINGHAM SHIPPING TO MANY MARKETS

Birmingham, Ala., manufactured clay sewer pipes are now being shipped to practically every port on the Pacific coast of America. Only a few days ago the steamer *Florence Luckenbach* cleared the port of Mobile with a cargo made up largely of clay pipe, made in Birmingham, for Los Angeles, San Francisco, Oakland, Cal., Portland, Ore., and Seattle, Wash.

The shipment of Birmingham manufactured clay pipe to the Pacific Coast has been brought about by the fact of the cheap all water route by the Warrior River thru Mobile and the Panama Canal. The all water route is \$14 to \$12 compared with \$31 to \$70 by all rail.

Besides these Pacific Coast shipments Birmingham clay pipe are being shipped regularly to practically every southern state in good sized quantities. As a result the clay pipe factories of Birmingham are doing a good business and are being operated at practically capacity. In fact the clay pipe works have never been closed down for a day, even during the hardest

PULSOMETER STEAM PUMP



Will keep your pit free from water. Pumps continuously without attention or adjusting. Handles any fluid up to 40% solid when agitated and is particularly suited to Clay Plant needs.

NEEDS NO LUBRICATION!
Ask us for proof of performance

PULSOMETER STEAM PUMP CO.

Executive Offices, 224 W. 42nd St., New York, N. Y.
Distributors in all principal cities



Mortar Colors

Home builders demand a beautiful color with their brick. Ricketson's colors give brick charm, freshness and warmth in appearance.

Red, Brown, Buff, Chocolate and Blacks—other tints made by combining.

40 years proves their permanency.
For Brick, Mortar, Cement, etc.

RICKETSON MINERAL PAINT WORKS
Milwaukee, Wisconsin

"1922 Will Reward Those Who Lower Their Production Costs"

Every Clay Manufacturer should have a copy of "Clay Plant Construction and Operation," in his library. It is a timely text book containing a wealth of practical information on Labor Saving equipment, efficiency methods, etc.

The price of this handsomely bound volume is \$4.00 prepaid.

You can't afford to be without a copy. Send for it today.

Brick and Clay Record

407 S. Dearborn St.

Chicago

Electric Motors and Generators

for all requirements of the
Brick and Clay Industry



BURKE ELECTRIC CO.

MAIN OFFICE AND WORKS
ERIE PENNSYLVANIA

Service-Sales Offices

NEW YORK	CLEVELAND	PHILADELPHIA
PITTSBURGH	DETROIT	BUFFALO

Sales Agencies

CINCINNATI: UNDERWOOD ELECTRIC CO.
KANSAS CITY: W. T. OSBORN

AN IDEAL LOCATION FOR YOUR NEW PLANT!

Along the Pittsburgh, Lisbon & Western Railroad, lies one of the best clay and shale fields in the country. The clay supply is practically inexhaustible and is overlaid with a vein of bituminous coal of excellent quality. Electric power and natural gas available.

The Field is proven by the ten successful companies now in operation along the line.

Write today for information, including analysis of clay and coal, factory sites and price of land. Correspondence solicited.

Pittsburgh, Lisbon & Western R.R.
LISBON, OHIO

part of the financial depression. The products of these plants have at all times found a ready market.

The face brick business continues good. In fact the Birmingham made face brick are now being shipped far afield. During the past few days large shipments of face brick have been made to Belzona, Miss., Tampa, Fla., Crowley, La., and a number of other places in the southern states. The increased demand for face brick in Birmingham, together with a number of good sized orders from distant places, is making a good demand for brick, and as a result nearly all of the brick plants in the Birmingham district are now being operated, at least to a part of their capacity. Many of the brick plants are being operated on full time now.

NEW TUCSON PLANT STARTS WORK

The Tucson (Ariz.) Pressed Brick Co. is just beginning the operation of its new plant. All new machinery has been installed and the company will operate all year round. The kilns are being fired with oil.

PUTS OUT HIGH CLASS ADVERTISING

In order to boost a high class product the Los Angeles Pressed Brick Co. evidently believes that high class advertising is necessary. The advertisement of Heath hollow tile shown here was designed by C. E. Ruttan, an artist of



**He's a Wise Owner--
Building With
Heath Hollow Tile**

His grandchildren's children can live in this house and think it new. For a Heath Hollow Tile home is a permanent home; economical in the long run; fire-proof, damp-proof, sound-proof; and besides effects a substantial saving by reducing insurance and upkeep.

Architects and designers are glad to specify "Heath" Hollow Tile for it lends itself admirably to beautiful construction and insures durability for their creations. Contractors and builders are pleased at its easy "workability" with its attendant economy of labor and worry. There is yet to be a regret recorded where an owner has built with "Heath" Hollow Tile.

Use "Heath" Hollow Tile in building your home. Time will vindicate your judgment.

L. A. Pressed Brick Co. is also the largest manufacturer of Face Brick in the West.

The Standard of Quality in Clay Products
L.A. Pressed Brick Co.
ENTIRE SIXTH FLOOR - FROST BLDG.
Second and Broadway
Phones Main 501 - 1046

An Artist of National Fame Drew Up the Above Advertisement Which Is Used by the Los Angeles (Cal.) Pressed Brick & Tile Co. in Their Campaign

national reputation. Mr. Ruttan has executed the art work for the advertising of this country's best known advertisers, among whom are such names as "Post Toasties," "Pompeian Cream," "Proctor & Gamble Co.," and so forth. The Los Angeles Pressed Brick Co. does considerable advertising.

CALIFORNIA CONCERN CHANGES HANDS

The San Diego (Cal.) Tile & Brick Co., 223 Spreckels Building, has succeeded the Terra Cotta Tile & Brick Corporation, it has been announced.

MOTOR TRUCK HAULS CLAY FROM PIT

Clay at the plant of the Bakersfield (Cal.) Sandstone Brick Co. is hauled from the pit to the plant in five ton dump trucks and dumped alongside the pug-mill, doing away with hoist, engineer and power. The company operates a fleet of trucks and trailers and in a normal year the plant runs approximately ten months. Business has been very good.

GOOD MARKET FOR DICKEY MASTERTILE

The California Brick Co. of Niles, Cal. is enjoying an increasing demand for their Dickie Mastertile, which is rapidly gaining favor as a building material because of its resistance to heat and cold and its imperviousness to moisture.

A model building constructed of Dickie Mastertile is being exhibited at the California Industries Exposition in the Auditorium at San Francisco. N. A. Dickey, president of the company, is making a special effort to familiarize all visitors to the exposition with the utility and advantages of this product.

WILL ELECTRIFY ENTIRE PLANT

In order to keep its plant speeded to the production point required by the great building activity in southern California, the Los Angeles Pressed Brick Co. will shortly electrify its four plants.

The plan of electrification has been in contemplation by the company for more than a year, but it could not be undertaken until the completion of improvements which include the installation of modern conveyor system for handling clays, the construction of a group of huge reinforced concrete clay bins and the erection of an overhead monorail for the quick and efficient handling of the clays from the conveyor to the bins. The program of improvement in the mechanical part of the plant having been completed, the company has now commenced electrification.

When the electrification of the plant is completed it will mean the introduction of methods designed to enlarge the plant output of face and enamel brick, hollow tile and architectural terra cotta and greatly increase its efficiency. Electrically driven cars will transport the materials to and from the kilns, the machinery for brick manufacturing will be run by electricity, the electric lighting installation thruout the plant will be doubled and many electrical devices will be arranged to safeguard the workmen.

When all improvements are in this company will be one of the best equipped in the west. The bins which the company is now building are said to be the largest clay containers in this section, having a capacity of more than 12,000 tons. They will enable the company not only to have a larger supply of clay always on hand, but will allow for the proper aging of the clay.

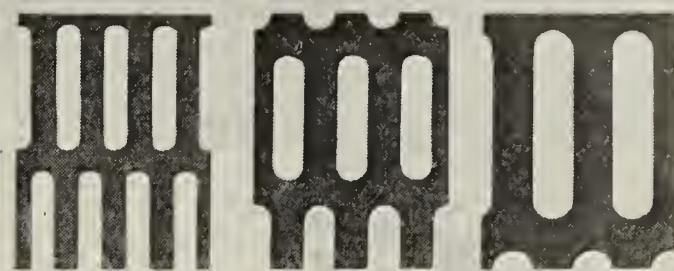
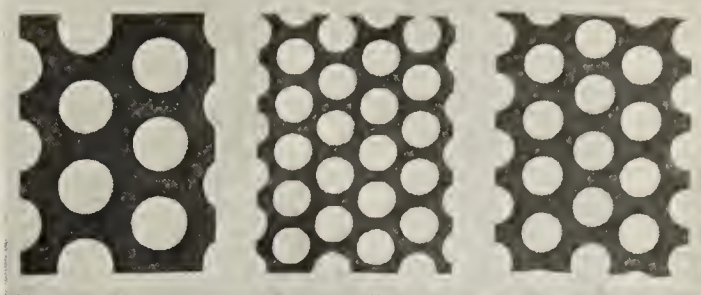
REBUILDING BURNT PLANT

The work of rebuilding the plant of the Donnelly Brick Co. at Kensington, Conn., which was destroyed by fire on October 16, is progressing rapidly. The plant is expected to resume operation within a short time.

INSTALLED COAL HANDLING SYSTEM

The Park Brick Co., Hartford, Conn., has recently installed a coal handling device for use in the retail coal business which that company conducts. Business has been rather quiet for the concern, which operates on an average of seven months a year.

Perforated Steel Screens



For Screening Clay, Shale, Sand, Gravel, Stone and Cement

All sizes and shapes of holes in metal of proper thicknesses to give the best screening results.
Sheets furnished flat or rolled to shape for revolving screens.

THE HARRINGTON & KING PERFORATING CO.

635 N. Union Ave., Chicago, Ill.

NEW YORK OFFICE: 114 Liberty St.

You won't have to worry about competition if you treat your clay with

R. H. Precipitated Carbonate of Barytes

You can safely guarantee that your brick will be

Scum-Proof

You can get a higher price and influence architects to specify your product because Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's dependable.

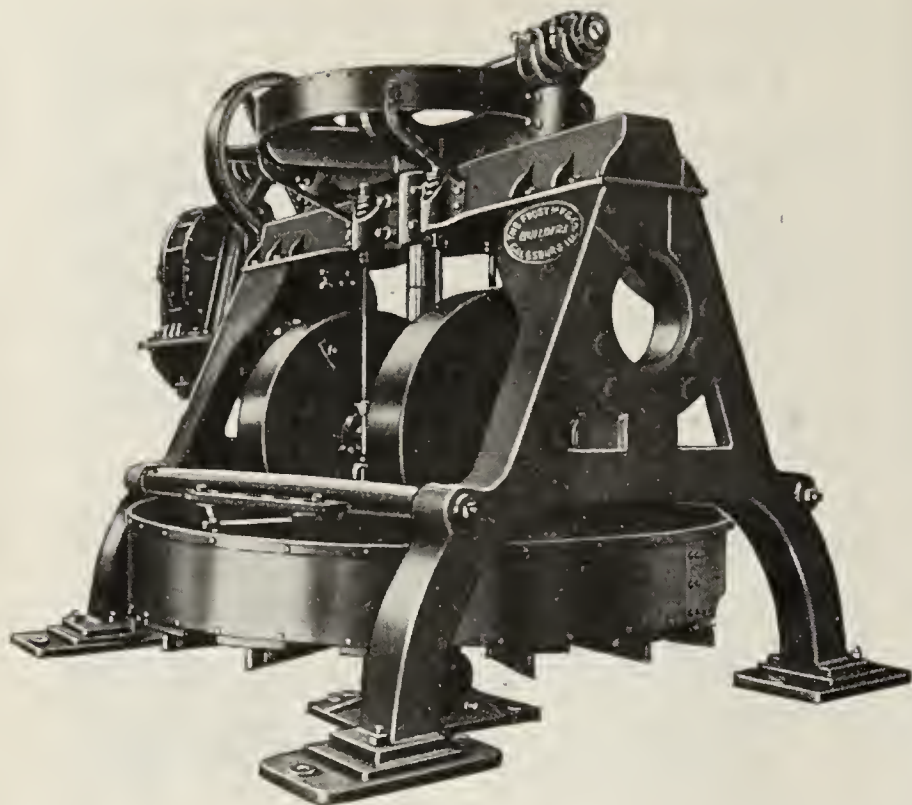
We have a complete line of high grade chemicals for the clay industry

The Roessler & Hasslacher Chemical Company

709-17 Sixth Ave.

New York

Chicago, Ill. Cleveland, O. St. Louis, Mo.
Kansas City, Mo. San Francisco, Calif. Philadelphia, Pa.
Boston, Mass. New Orleans, La.
Pittsburgh, Pa.



DO YOU KNOW?

That Frost Pans aim to give you the best quality of material, workmanship and fabrication that can be obtained.

SEND US YOUR INQUIRIES
THE FROST MFG. CO.
 GALESBURG, ILLINOIS.
 ESTABLISHED 1851

PEABODY COAL COMPANY

FOUNDED 1883

OPERATING 36 MINES
 WITH ANNUAL CAPACITY
 OF
18,000,000 TONS



GENERAL OFFICES:

332 SO. MICHIGAN AVE., CHICAGO

BRANCHES:

SPRINGFIELD, ILL.	PINEVILLE, KY.	OMAHA, NEB.
PEORIA, ILL.	CINCINNATI, O.	DEADWOOD, S. D.
ST. LOUIS, MO.	MINNEAPOLIS, MINN.	SPOKANE, WASH.
KANSAS CITY, MO.		SHERIDAN, WYO.

"PEABODY FOR SERVICE"

GEORGIA CLAYS FUSE ABOVE 3,140 DEG. F.

Deflocculation tests of clays examined in the course of the cooperative work by the United States Bureau of Mines with the Central of Georgia Railway conducted at the Columbus Ceramic Experiment Station, are practically completed. A cone 1 burn (1,150 deg. C. or 2,102 deg. F.) on the color pats and shrinkage bars has been made and the burning properties may now be determined. Water of plasticity and drying shrinkages were determined. Fusion tests made in a Hoskins carbon resistance furnace indicated that all clays fuse above cone 30 (1,730 deg. C., or 3,140 deg. F.).

GEORGIA RATE HEARING SUSPENDED

Due to the fact that the Interstate Commerce Commission is now considering commodity rates and that the findings of this body will have a bearing on rates in the southeast, the Georgia Railroad Commission has indefinitely suspended the freight rate hearings that were in progress in Atlanta during the latter half of November on a petition of the carriers for increased freight charges. The hearing was of vital importance to all industry in the southeast as the carriers had planned to carry virtually the same petition to other southeastern states on completion of the Georgia hearing. Brick and clay products were among the important industries in Georgia affected by the case as increased rates were sought on these commodities. Whether or not the hearings will be taken up again has not been definitely announced.

HOOD STARTS MATERIALS DEPARTMENT

The new Atlanta, Ga., home of the B. Mifflin Hood Brick Co. has been completed, including three large warehouses and general offices, and the company moved into the new location the second week of December. General offices have for some time been maintained in the Candler building and this location will hereafter be used as a city sales office and display rooms. The new warehouses provide ample space for all of the company's products which include face brick, hollow building tile, quarrie floor tile, riveria roofing tile and fireplaces. In addition to the general offices and warehouses in Atlanta the company also now maintains offices and carries large stocks at Memphis, Raleigh, Savannah, New Orleans, Charlotte and Jacksonville.

B. Mifflin Hood, president of the company, announces the addition of a new department for handling a complete line of building materials, including lime, cement, plaster, composition roofing, metal lath, and so forth. J. A. Cassidy, of Atlanta, connected with the building materials trade for some years, will have charge of the new department.

CONFIDENT OF MUCH BUSINESS AHEAD

The Moscow (Ida.) Fire Brick & Clay Products Co., which is made up entirely of local men, expects the coming year's business to be the largest in its history. The company is continually receiving orders from new territory. A shipment of seven cars of fire brick will soon go forward to Portland and Seattle, and a repeat order for one car of special milled and screened fire clay, for use in blast furnaces, has been received from Tacoma.

PUTS OUT MONTHLY BULLETIN

The Engineering Advertisers' Association of Chicago, Ill., is now publishing a monthly bulletin giving a digest of the speeches made at the organization's meetings. This bulletin also includes other information of interest, regarding the movement of goods from industry, personal notes, and so forth. A limited number of copies are available and will be sent upon request to those interested in selling technical products.

CHICAGO FIRE BRICK CO. TO ENLARGE ITS DEALER ORGANIZATION

Extensive plans have been formulated by the Chicago Fire Brick Co. for greatly enlarging its present dealer organization during the coming year.

Supervision and working out of these plans is in charge of E. B. Allen, who succeeds N. H. Burlingame, as manager of dealer service. Mr. Allen is unusually well equipped for the work in hand. Besides a valuable sales and advertising experience, he has a practical knowledge of dealer problems gained thru many years contact with the building supply dealers thru-out the eastern states.

Remarkable success has been achieved by the Chicago Fire Brick Co. in building up a strong dealer organization thru its 100 per cent. Dealer Distribution Policy. The company is a strong advocate of this policy and the plans formed for the ensuing year insure its continued success.

EXPERIENCING ACTIVE DEMAND

The Western Clay Products Co. of Weir, Kan., is experiencing an active demand for its hollow building tile. 10 to 12 carloads are shipped weekly to towns and cities within a radius of 100 miles in Missouri and Kansas, according to Neill Allen, the general manager of the plant.

"We have been having an unexpected volume of business for more than 60 days past," Mr. Allen said. "When we were expecting the business to get slack, it continued on the increase until now we have the plant running at capacity." Nearly 50 men are employed at the plant.

DOUBLES CAPITAL STOCK

Amended articles have been filed by the Corbin (Ky.) Brick Co., increasing the capital stock from \$50,000 to \$100,000.

BUSINESS PICKING UP

The Louisville (Ky.) Fire Brick Works reports slightly better business, and that it is operating three to four days a week at both the Louisville and Grahn, Ky., plants, the last reduction in prices, about two weeks ago, resulting in levels getting down to a point where movement should improve.

TRUCKS CHEAPER THAN RAIL

The Southern Brick & Tile Co., Louisville, Ky., reported that for the past several months it had been handling almost all of its brick and tile deliveries from the plant to Louisville, by truck instead of by rail, due to high rail rates and low truck rates, and the fact that there isn't the rehandling necessary. Truck owners have been hungry for business, and willing to take all the hauling they can get at a fairly reasonable price.

LOOK FOR FREIGHT RATE CUT IN LOUISVILLE

It is believed by a number of men that jobbers will have some little advantage next season in bringing brick from distant cities, in event the expected reductions in freight rates become effective shortly after the first of the year. One jobber remarked that he anticipated a reduction of around 25 per cent. in freight rates, which would cut off \$1.75 to \$2.50 a thousand on some of the brick jobbed in this market. Some brick that were handled here a few years ago from really distant cities haven't had much of a show with freight rates as they are today.

1921 SALES EXCEED PREVIOUS YEARS

L. M. Parsons of the R. C. Tway Coal Co., building supply department, Louisville, Ky., said: "I've sold more brick this season than any other in the 10 or 12 years that I've been sell-



\$8.40 per dozen—\$96.00
per gross

Don't Pay the Doctor

Mr. Clay Plant Operator, you can readily realize the chances you are taking when you compel your men to handle brick and tile or some other sharp, rough edged material about your plant. If their hands are unprotected they soon become scratched and bruised and very often infection causes large doctor bills. You have to pay this cost.

Let us show you how to eliminate this waste. Send today for a trial dozen pairs of our Tuf-Tanned Kant-rip Mittens and a dozen of our Hand Pads. Try out a pair of each on the hands of one of your men. Check the results carefully.

If after fair trial you are not satisfied with the results just return the remaining pairs at our expense.

Write for information



\$4.50 per dozen
\$50.00 per gross

Des Moines Glove & Manufacturing Co.
508 Fourth Street, DES MOINES, IOWA



Continuous Performance With Very Slight Expense

That's the Marion Motto

The Marion Rust Special Feeder Mixer embodies all the good points of an entirely successful machine. It is a labor and time saver which will aid you in improving your ware and in cutting your production costs.

Take advantage of your opportunities, Mr. Clay Plant Owner. Save whenever and wherever possible. Write us today for complete information concerning all Marion Equipment for Modern Clay Plants.

No Obligation.

Marion Machine Foundry & Supply Co.
Box 395 Marion, Indiana

WHAT METHOD DO YOU USE?

This question when applied to the manufacture of Stiff Mud Ware deserves consideration.

The Modern Way is the Right Way

THE ROLLER PRESS for all clays, shales, fire clays, surface clays, short bonding clays and laminating shales and clays.

Brick, Hollow Ware, Roofing Tile, Floor Tile and Drain Tile can be made on the ROLLER PRESS.

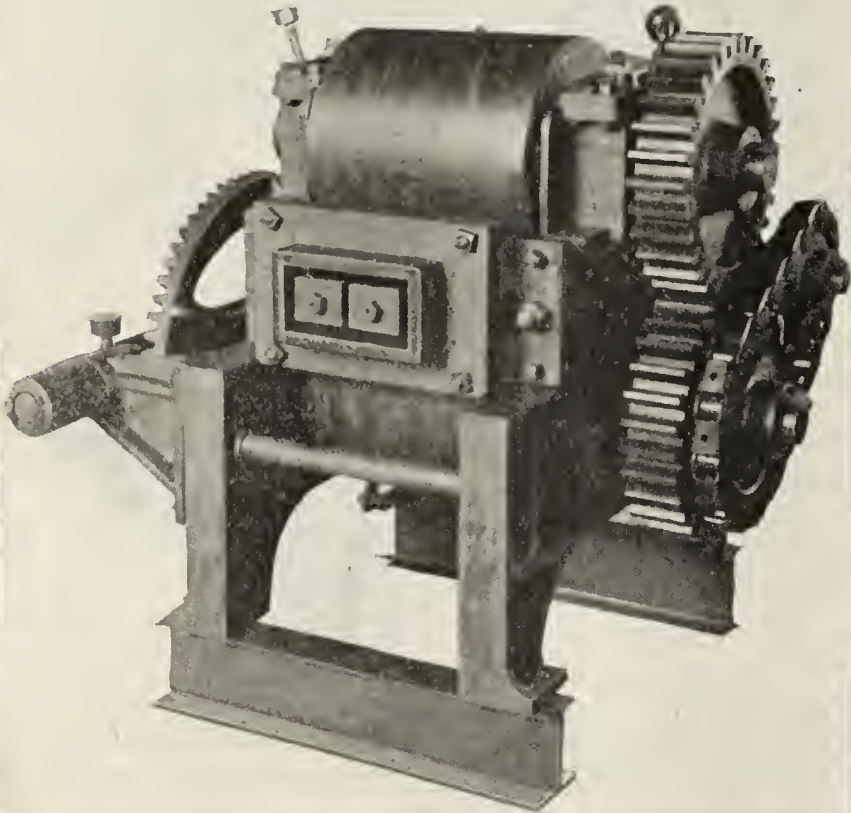
Start now to solve your production problems.

CLAYCRAFT SERVICE COMPANY

503 Wainwright Building

St. Louis, Mo.

Everything for the Clayworker.



ing face brick in Louisville. However, I've handled more small orders than I ever dreamed could be handled in one year. They came in one and two car lots, one and two load lots, in all kinds of small lots, and we've not handled more than three or four really fair jobs all season. Yet the movement in tonnage, or thousands has been large. On our high grade lines we've handled more brick than we expected, while on the cheaper lines we've had the volume of business, as price has gotten the business to a considerable extent."

FIRE CAUSES \$100,000 DAMAGE

Yard No. 1 of the Baltimore Brick Co., Highland Avenue and Monument Street, Baltimore, Md., was destroyed by fire recently, with total loss approximating \$100,000, it is reported. This loss included five kiln buildings, boiler and engine rooms, machine department, and other structures, with considerable new machinery, stocked at the plant awaiting installation.

DISSOLVES PARTNERSHIP

Erastus E. Burns and William L. Nassau Jr., doing business in Northampton, Mass., under the firm name of the Burns-Nassau Brick Co., have dissolved partnership and the business formerly conducted by them will be carried on by Mr. Burns under the firm name of The Burns Brick & Construction Co. There will be no immediate change in the company's location or staff.

CHANGES NAME FOR CONVENIENCE

As a matter of convenience, and in no way affecting the present organization of the company, the George H. Clippert & Bros. Brick Co. of Detroit, Mich., will change the name of its firm to Clippert Brick Co., the change to be effective January 1. The personnel and policies of the company will remain the same.

NEW MICHIGAN CONCERN PRODUCING

The Cheboygan Tile & Roofing Co.'s new plant is now in operation, and the good quality of the company's clay has been proven by the first products manufactured. The company is equipped to make drain tile, building brick and hollow tile, having a capacity of 30,000 brick and 30,000 tile per day. Everything is modern and up-to-date at the new plant.

CADILLAC CLAY CO. MOVES

The Cadillac Clay Co. has recently moved its main office in Detroit, Mich., and after December 1 will be located at 1442-44 Park Place, East. The new headquarters will be located on the ground floor just around the corner from all the best hotels in Detroit and within two or three minutes' walk from the big office buildings. The Cadillac Clay Co. extends an invitation to all of its many friends to visit them at their new offices.

LANSING COMPANY COMPLETING BIG SEASON

More public building was accomplished in Michigan this season than in any time for years, and the advance work which many architects and contractors are getting now promises an energetic public building campaign next season. This is the opinion of George P. Anderson, manager of the Brick & Supplies Co. of Lansing, Mich. His company has had big business this year in both homes and public buildings, and is preparing for a big year in local building next season.

MINNEAPOLIS PLANTS HOPEFUL OF FUTURE

The Hydraulic-Press Brick Co., at Minneapolis, Minn., feels cheerful and looks forward to next year with expectations. The

STEVENSON

DRY PANS

WET PANS

ROLL CRUSHERS

SEWER PIPE PRESSES

SEWER PIPE TURNERS

TILE PRESSES

PRESS FEEDERS

CRUSHER FEEDERS

PAN FEEDERS

BUCKET ELEVATORS

GRAVITY ELEVATORS

BRICK BARROWS

TILE BARROWS

SEWER-PIPE BARROWS

GIGS

ETC.

THE
STEVENSON CO.

Wellsville

Ohio

Western Sales & Engr.
Office

801-802 Monadnock Bldg.

Chicago, Ill.

Bulletins
on
Request

Northwestern Clay Products Co., also of Minnesota, handling building tile, state that altho the usual seasonal dullness is upon them the indications for a good year beginning in the spring are very favorable. Twin City Brick Co. also report that business is steady and shows no serious decline.

CARL STEINER LEASES ZUMBROTA PLANT

The plant of the Zumbrota (Minn.) Clay Co. has been leased to Carl Steiner, former manager of the Colburn Brick & Tile Co., for a period of five years, a report states. According to the Zumbrota News, there has been a shakeup in the management of the Colburn company and R. Colburn and Carl Steiner have resigned. Harry Brown will look after the duties formerly conducted by Mr. Steiner, and H. W. Linder will have charge of the sales end.

EXPECT TO CONTINUE OPERATIONS

The Fulton (Mo.) Fire Brick Co. expects to operate at least four days a week for a considerable period in the future, according to C. O. McNamee, general manager. Its product is being sold almost as fast as it is made.

PERRY, MO., MAY GET FIRE BRICK PLANT

An investigation of the fire clay in the vicinity of Perry, Mo., is being conducted by a committee to determine the advisability of erecting a brick plant there. J. L. Christy of St. Louis, an experienced man in the clay business, is the instigator of the movement, it is stated. His idea is to form a company with a capital stock of between \$200,000 and \$250,000, which would build a plant and furnish means to turn out 2½ carloads of brick per day.

CLAY CENTERS OF MISSOURI

The clay centers of Missouri are located on either side of Boone County. In Gasconade County fire clay and flint are found in great quantities. Large plants for the manufacture of these products are now established in this section of the state, notable among them being those at Fulton, Mexico, Farber and Wellsville. Shipments of clay also are still being made to Kansas City and St. Louis, where it is made into tile and brick. Near Versailles, in Morgan County, is another large clay field, where the Walter S. Dickey Co. of Kansas City, has a large plant. They derive much of the raw material for their Kansas City plant from this district.

CLAY POSSIBILITIES AT COLUMBIA, MO.

That Columbia, Mo., has wonderful opportunities for the development of its clay fields and for large production of brick and other clay products is the opinion of S. E. Cullum, a ceramic engineer of St. Louis, who is largely interested and actively engaged in assisting in the reorganization of the Edwards Brick Co. of Columbia, and Dr. W. A. Tarr, professor of geology at the University of Missouri.

Mr. Cullum pointed out that all clay products can be made from the clay at the Edwards Brick Co.'s plant and these products will be of very high class, as shown by the brick already in use in Columbia. Floor tile, such as used in some of the finest buildings here and elsewhere, can be made out of the clay. Also hollow tile, fire brick and glazed brick.

"The company will own 39 acres of coal, fire clay and limestone," said Mr. Cullum. "The coal will furnish the fuel, the clay the material with which to work and the limestone will be used to build hard roads around the plant."

Mr. Cullum suggested the establishment of a laboratory



"The ERIE is the most up-to-date and complete shovel on the market today." *H. C. McLenithan, Duffney Brick Co., Mechanicville, N. Y.*

“OUR ERIE has more than paid for itself in 10 months and is as good as new. We are averaging 360 cu. yards a day in tough blue shale.” *J. M. Purcell, Pres., Duffney Brick Co., Mechanicville, N. Y.* (They now own two ERIES.)

The ERIE gives steady, reliable service digging stiff clay or hard shale. A careful comparison of steam shovels will convince you that the ERIE is the shovel to buy.

Write for our Bulletin "B," showing just what the ERIE can do.



BALL ENGINE CO., Erie, Pa., U. S. A.

Builders of ERIE Revolving Shovels and Locomotive Cranes.

Branch Offices: NEW YORK, BOSTON, PITTSBURGH, CHICAGO

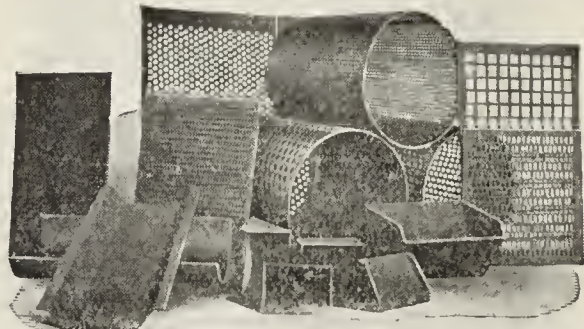
Representatives throughout the United States.

ERIE

Revolving Shovels



HENDRICK SCREENS FOR ALL PURPOSES



**ELEVATOR BUCKETS
CONVEYOR TROUGH and FLIGHTS
STACKS, TANKS,
GENERAL SHEET and
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TUNNEL KILN

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Each carload of ware that traverses a Russell Tunnel Kiln (Zwermann Patent) is preheated, fired and cooled under identical conditions. A uniform, high-grade product results.

Great economy in time, fuel and labor is effected by continuous and semi-mechanical operation.

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HY-GRADE MANGANESE CO.
WOODSTOCK, VA.

Miner
and
Grinders

**Especially Prepared
for Brick Making**

Sales Office: CHARLESTON, W. VA.

for students interested in ceramics, and cooperation with the University of Missouri in such a field. The plant would give the students the practical experience.

Dr. Tarr, of the university, and his classes in geology have taken investigation trips thru all this part of the country. Other sources of clay near Columbia are numerous and the successful promotion of the Edwards plant might result in other factories being located here.

ST. LOUIS MAY LIFT HOLLOW TILE BAN

The Real Estate Exchange of St. Louis, Mo., is seeking the revision of the city building code to permit the use of hollow tile in structures within the fire limits as well as outside the limits. Orman J. McCawley, chairman of the committee, says that this would reduce the cost of construction, and under the proper regulation would be attended by no disadvantages.

Another item to be taken up is division walls. The present code requires these walls in an apartment or flat building on a 30 inch concrete base, and to be 18 inches thick in the basement and 13 inches thick above the basement. According to Mr. McCawley, the so-called "curtain walls," built of tile and resting on steel I beams, afford adequate fire protection and are less expensive.

The committee states that it is not desired to change the code to permit the erection of unsafe structures, but merely to include newly devised methods and materials which will lower construction costs.

BRICK GO THRU FIRE—USED AGAIN

The fire resistance of brick is again brought to notice at Hamilton, Mont., where the new Liberty Theatre is being erected. Brick from the walls of the famous old Ravalli Hotel of that city, which was destroyed by fire about two years ago, will be removed to Main Street, cleaned of old mortar and used in constructing the back and side walls of the theatre building, which will be 50x130 feet in size.

CLAY MINING COMPANY EXPANDS

The Crossley Mining Co., American Mechanic Building, Trenton, N. J., operating large clay properties in Ocean County and other parts of the state, has filed notice of incorporation under its present name, with capital of \$225,000, for general expansion in operations. Extensive plans are under way for development, to include the supply and distribution of clays of all kinds, with branch at East Liverpool, Ohio, to handle trade in this district. George C. Crossley is president and general manager; C. C. Engle, sales manager; and Archer Coddington, manager of mining properties.

SALES COMPANY LEASES OFFICE

The Fish Brick Sales Co., Inc., New York, heretofore located at 105 West Fortieth Street, has leased offices in the building at 25 West Forty-third Street, for local headquarters.

FIND VALUABLE SHALE IN NORTH CAROLINA

Large deposits of shale under the hills in and about Norwood, N. C., have been discovered, and considerable interest has recently been manifested in them. A large shale brick plant is now in operation at Norwood, and it is reported that a second company is being organized. Inquiries are being received from various North Carolina points and even New York state. The shale is said to be of a very high grade.

TO INCREASE CAPACITY 25,000

Several thousand dollars have been invested in the installation of new brick making machinery, dryers and so

forth, at the plant of the Kendrick Brick & Tile Co., of Mount Holly, N. C., according to N. B. Kendrick, owner of the plant, who states that the capacity will be increased as a result by 25,000 brick per day, giving the plant a total capacity of 100,000 daily. This is one of the few plants in the southeast that has been able to maintain capacity production during the period of depression.

INSTALLING NEW DRYER

The Continental Clay Co., of Canton and Columbus, Ohio, is operating three of its four clay products plants. Plant No. 2, located at East Greenville, has been closed down for repairs. This plant has been manufacturing hollow building tile 5x8 inches. A new dryer is being installed and in addition several changes in the arrangement of the plant are being made.

SHIPS 67 CARS IN OCTOBER

Notwithstanding nearly all brick and tile industries in New Philadelphia, Ohio, are running, the prospect for an increase in building block and brick orders is two or three months ahead, say manufacturers.

During the month of October one Sugar Creek plant shipped 67 car loads of clay products and another firm in that district 51 car loads of brick.

CLAY PRODUCTS PRICE RECEDING

Clay products are being reduced in price, in the New Philadelphia, Ohio, district. Prices on building block and hollow ware have dropped from 10 to 15 per cent. in the last week. Brick for ornamental structures has declined in price from 10 to 20 per cent. Sewer pipe dropped from five to 10 per cent. a month ago. Fire brick has declined in price 50 per cent. during the past year. No revival in business is looked for before the new year.

WORKS OVERTIME TO FILL DEMAND

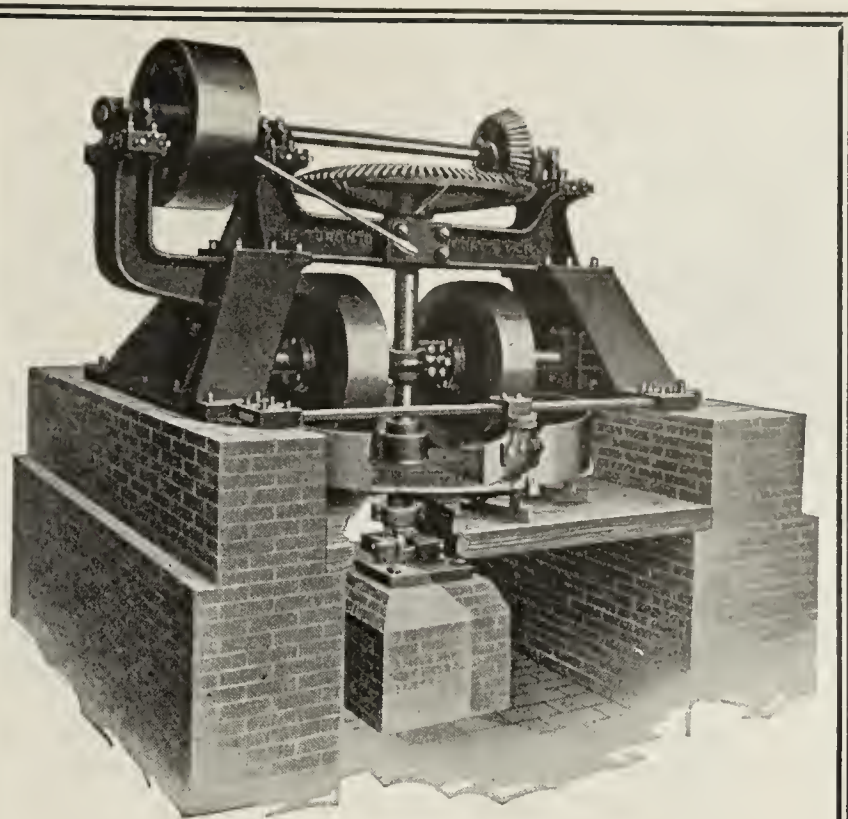
The Gem Clay Forming Co., Sebring, Ohio, is operating overtime because of a pressure of orders. An enormous demand for gas stoves with the backwall that consumes the poison gas from gas stoves, is being experienced. These walls are made when sawdust is mixed with the clay and the backwall is molded. The backwall is then placed in a superheated furnace for burning and the sawdust is consumed, leaving the clay product honey-combed by the burning. The claim is made that none of the gas fumes escape into the room from the pipeless stoves.

PREPARE FOR BUSY SEASON

Manufacturers of face brick in Columbus and the Hocking Valley, Ohio, section are rather optimistic of the coming season. Indications point to a good demand for brick, and, in fact, clay products of all kinds, and preparations are being made for a rather busy season. Prices of both face and common brick are steady at previous levels. Face brick range in price from \$22 to \$36, delivered on the job, while common brick are quoted at \$14 to \$15.50, delivered. There is a plentiful supply on hand and considerable business is reported in certain sections.

OHIO MAY LOWER SMALL HOUSE TAX RATE

Aid to home building in Ohio is seen in the proposal of Senator J. J. Rowe to introduce a resolution in the present state legislature, providing for a reduction in the tax rate on the first \$5,000 for house builders or owners who use their dwellings as residences. Small and low priced dwellings thus will gain a considerable benefit, and those costing more will benefit to the extent that the proposed reduction in tax rates



Type B, 9 and 10 Foot Dry Pan

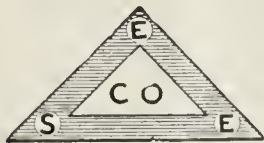
TORONTO GRINDING PANS ARE BUILT TO GRIND CLAY

The people who are using our pans tell us that they cannot be surpassed for daily production.

We would like to quote
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Toronto Foundry & Machine Co.
Toronto, Ohio

POIDOMETER



PROTECT your ware from imperfection and faults due to improper tempering and mixing of the clay.

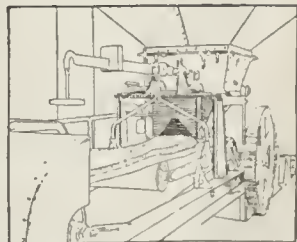
PROTECT your profits from excessive labor costs.

Install the Poidometer.

It will eliminate the labor of your pug-mill man. Never needs attention or repairs. Works under any conditions and is 99.75% accurate. Will weigh from 1½ to 21,000 lbs. per minute.

Write us today for complete information. Our service staff is always at your service.

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EAGLE SHALE PLANER

Every Machine in Your Plant Depends Upon the Gathering of Your Clay—are You Going to Leave This Most Important Step in Your Industry to an Incompetent Machine or a Gang of Slow, Expensive Shovelers?

Not if you are a progressive manufacturer. You'll do as many other experienced men have done. You'll either install or immediately investigate the

EAGLE SHALE PLANER

It does the work and saves on labor and time. What more can you ask of any machine?

Full information on request. Write today.

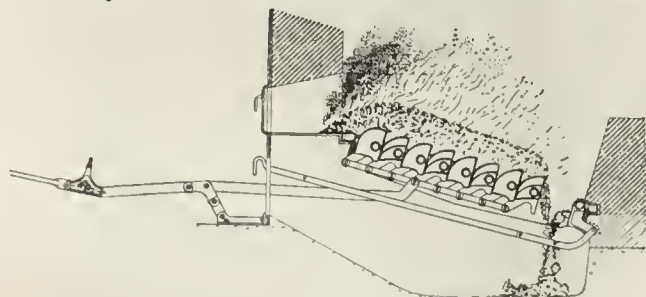
EAGLE IRON WORKS

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COKAL HAND STOKERS

Effect Perfect Firing at Costs Much Lower Than Any Other Method of Firing on the Market



IT STOKES AND CLEANS

PROOF

The Ross Clay Products Co., Inc.
Uhrichsville, O.
Nov. 10, 1921

Cokal Stoker Corporation,
1037 North Clark Street,
Chicago, Illinois.

Gentlemen:—

We have been using your stokers for the past eight months and find the same to be a great improvement over any we have used.

Previous to the time we installed the Cokal Stokers it was necessary that we use nothing but lump coal. Now we are using slack and machine cuttings which we formerly had to waste and at the same time reducing the amount of coal consumed and getting a greater amount of power than we were heretofore able to obtain.

We have not had a single steam failure since we have been using the Cokal Stokers. We also find that on account of not having to clean fires the old way our firemen are very much in favor of the Stokers and have plenty of time to attend to other duties which are sometimes neglected by the firemen.

Yours very truly,
The Ross Clay Products Company.

Let us send one of our engineers to your plant with a working model. He will give you complete information and his visit will absolutely not obligate you in any respect.

Write us today.

COKAL STOKER CORPORATION
1037 NORTH CLARK STREET, CHICAGO

affects the first \$5,000. The present rate is approximately 18 mills. The Rowe plan would cut it to about 14 mills. Passage of the resolution will permit the question being put up to the people for vote at the next election. Mr. Rowe hails from Cleveland, where he is in the building supply and fuel business.

BOWEN SALES COMPANY OPENS OFFICES

The Bowen Brick Sales Co., 601 Cleveland Discount Building, Cleveland, Ohio, has announced the opening of offices and brick display rooms for the purpose of conducting a wholesale and retail business in face, shale, common brick and builders specialties. The company also represents an eastern terra cotta line.

SECURES ORDER FOR 1,000,000 FACERS

The Hocking Valley Products Co., brick department, has secured an order for 1,000,000 face brick for the ten story Mount Royal Hotel building at Montreal, Can. Howard F. White, sales manager of the company, personally made the bid for the light-colored class of brick. The plant of the company at Greendale, Ohio, is being operated on full capacity.

STRUCTURAL SERVICE BUREAU MOVES OFFICE

The architectural firm of Boyd, Abel & Gugert has removed its offices to the Otis Building, 112 South Sixteenth Street, Philadelphia, Pa. This also effects the removal of the Structural Service Bureau from the Estey Building to the Otis Building. This bureau is an organization for increasing safety, efficiency and productivity in the building industry thru a better understanding of the characteristics, manufacture and utilization of materials, equipment and devices. Connected with this bureau is D. Knickerbacker Boyd, consulting architect for the Associated Tile Manufacturers; Victor D. Abel; Francis A. Gugert; A. Lynwood Ferguson, and associates.

BEAVER FALLS MEN EXPECT GOOD BUSINESS

Two industrial leaders of the Beaver Valley district of Pennsylvania, Superintendent L. B. Rainey of the Fallston Fire Clay Co. and B. E. Thompson of the Rochester Clay Products Co., are confident that good business is coming to brick manufacturers in the spring. They point out that building operations must begin soon, and this will create a demand for the finer grades of brick used in building homes, and in which Beaver Valley manufacturers specialize. Beaver County is the center of the brick trade in that district, because of the fine grades of clay found there, and brick manufactured there is shipped to practically all parts of the country.

CLAY PRODUCTS EXHIBIT ATTRACTIVE

An attractive display of brick, tile and other products is being exhibited by the Columbia (S. C.) Clay Co. at the Columbia Builders Exchange. A specially made cabinet lends a touch of distinction to the showing.

According to the Exchange secretary, the displays of the Columbia building trades are expected to develop into an important adjunct of the association work. A number of exhibits have already been placed, and the public is invited to look them over at any time. Prospective builders may gain valuable information in this way.

EXPERIMENTING WITH ROOFING TILE

Experiments with the manufacture of clay roofing tile are being conducted at the Daisy plant of the Chemical Clay Products Co., near Chattanooga, Tenn. If proven successful, this will be the only plant in the south producing such

tile. An attractive flooring tile is being turned out by the Daisy plant at the present time.

This plant is one of several owned by the allied interests of the Hood Pottery Clay Products Co., the Chemical Clay Products Co., and the Hood Brick Co., of which B. Mifflin Hood is president. Their headquarters are Atlanta, Ga.

FIRE DAMAGES TEXAS PLANT

Fire recently damaged the gas producing plant of the Stamford (Tex.) Brick Works to the extent of about \$3,000. No insurance was carried. The plant will be out of commission for two or three weeks.

PURCHASE DALLAS PLANT

George Hewitt, a contractor, and J. M. Reichenstein, head of the Cowser Lumber Co., both of Dallas, Tex., have purchased the plant of the Dallas Press Brick Co. at Mesquite, ten miles east of Dallas. The purchase was made from S. B. Marshall and Charles Merzbacher, president and vice-president respectively, of the Dallas Press Brick Co. Most of the output of the plant is being used in Dallas.

DOES UNPRECEDENTED VOLUME OF BUSINESS

The Rutland (Vt.) Fire Clay Co. did the greatest volume of business in its 38 years of existence in October of this year for any one month, according to A. W. Perkins, president of the company. The company expects that November and December business will be in proportion. According to President Perkins, business started to improve in July and each succeeding month showed heavy gains.

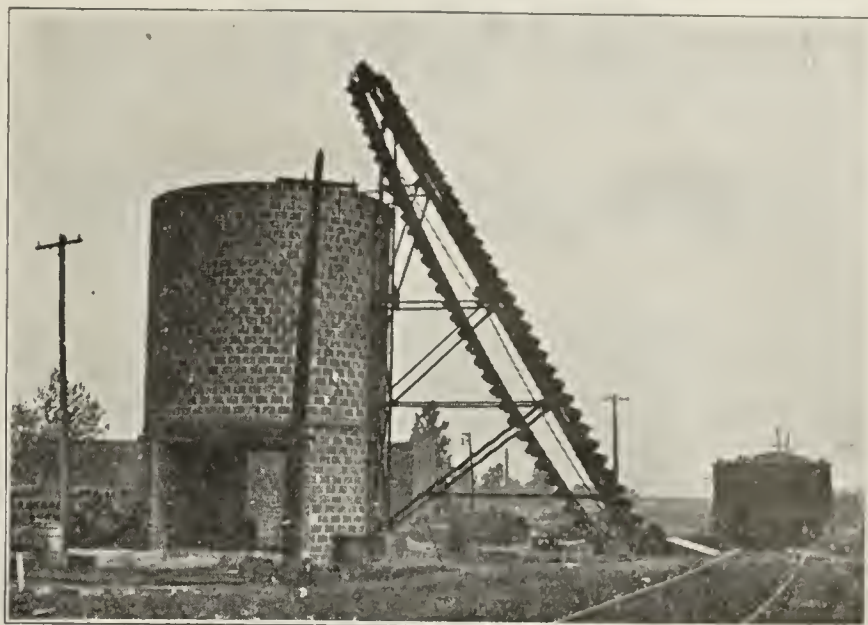
"Our traveling men report that buyers appear to have more confidence, prices have dropped and men are more willing to buy. No doubt stocks have been reduced during the past few months," Mr. Perkins said.

The company has 19 salesmen on the road and covers the territory east of the Mississippi and as far south as North Carolina. Of its 20 articles of manufacture the leading ones are plastic stove lining, patching plaster, roof cement, furnace cement and so forth.

President Perkins declares that as a result of increased business, another addition must be erected to the plant, probably in the early spring. His plant has been operated at full capacity and recently has been obliged to operate overtime.

WYOMING COMPANY DOES MUCH ADVERTISING

One of the important reasons why the Sheridan (Wyo.) Pressed Brick & Tile Co. has enjoyed continuous success in the marketing of its products is the fact that they are



Simplicity-Speed-Economy

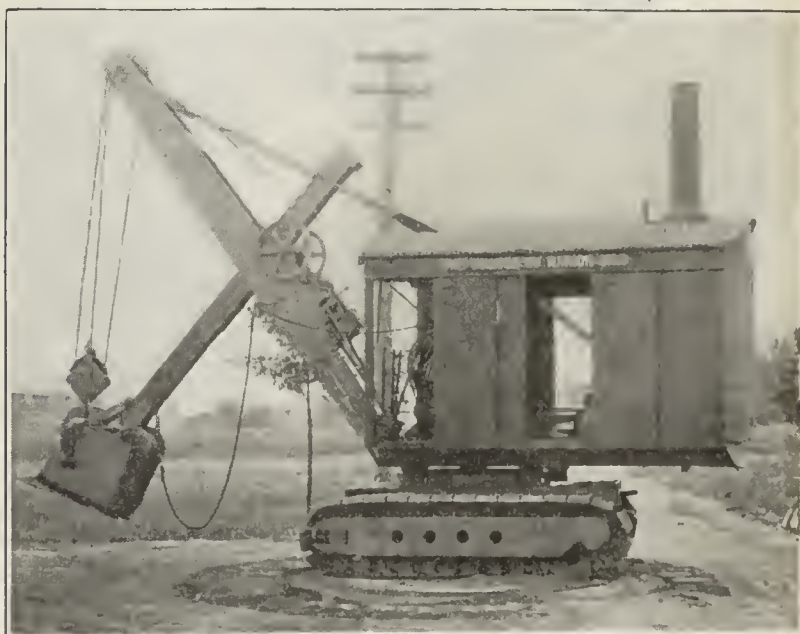
THE Sunbury Unloader requires only one man to operate. It reduces the time and cost of unloading coal to a minimum. It is speedy (55 tons in 50 minutes). Simply, yet durably constructed. Seldom needs repairs.

SUNBURY UNLOADERS will solve your problem of handling coal with less expense and more speed.

Tell us your requirements and let us send you complete information. It will not obligate you in any way.

THE SUNBURY MANUFACTURING CO.
SUNBURY, OHIO

Steam Shovels **OSGOOD** Modern Excavating Machinery



The OSGOOD 29—1 yd. Revolving Steam Shovel with Continuous Tread Mounting demands your investigation. Steel Truck Frame interchangeable for Continuous Tread or Traction Mountings.

Power Steering Devices; Vertical Submerged Tube Boiler; Easy Control Mechanism; Compact for work in close quarters; Horizontal Hoisting Engines; Makes a complete circle in a diameter of only 20 ft. and Convertible for Crane, Clamshell or Dragline Service are only a few superior features.

Revolving and Railroad Type Steam Shovels $\frac{3}{4}$ to 6 cu.yd.

THE OSGOOD COMPANY, MARION, OHIO, U. S. A.

"Build With Brick" The Everlasting Material—Safe From Fire

CHEAPEST IN THE LONG RUN

BUILDING BRICK

We produce building brick in a number of carefully graded faces—brick that compares in quality with the very best manufactured anywhere in the United States. Molded under an immense pressure, then carefully baked. It is truly everlasting.

MANUFACTURERS OF
Pressed Brick, Sile, Drain and Hollow
Building Tile

DEALERS IN
Sewer Pipe, Flue Lining, Fire Brick,
Clay, Mortar, Color Lime and
Cement, Black Blasting
Powder and Dynamite

HOLLOW TILE

Hollow tile for construction of stucco beams or to be faced with brick is fast becoming popular. It produces an ideal home—keeps the heat in, the cold out, is practically fireproof and costs no more in the long run. Hollow tile is best for building.

Sheridan Pressed Brick & Tile Co.

Sheridan, Wyoming

Please on Application

Carl F. Kneissel

This Advertisement Was Used by the Sheridan (Wyo.) Pressed Brick & Tile Co., and Occupied About a Half Page of Space in the Local Papers

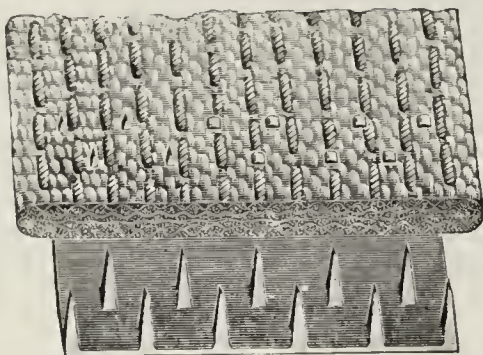
firm believers in the value of advertising. Reproduced herewith is one of their latest efforts in this direction. One other

OVER \$1000 SAVED

by using the

Talcott Clinching Belt Hooks

They
Reduce
the
Breakage
of
Belts



They
Make
the
Belts
Last
Longer

A Superior Fastener for All Kinds of Fabric Belting

Used for 30 YEARS in the leading Brick Works, Cement Works, etc., on HEAVY DRIVES and CONVEYOR BELTS.

SEND FOR FREE SAMPLES AND TRY THEM

W. O. & M. W. Talcott, Inc.

PROVIDENCE, R. I.

TALCOTT STANDS FOR QUALITY



"Entering their thirtieth year of service."

Three Jenkins Iron Body Globe Valves that have been in service for more than 29 years at 441 Pearl Street, New York City, are still doing duty as dependable as ever.

Long uninterrupted service accounts for the extensive use of Jenkins Valves.

JENKINS BROS.

New York Boston Philadelphia Chicago
Montreal London Havana

FACTORIES: Bridgeport, Conn.;
Elizabeth, N. J.; Montreal, Canada



Identify genuine
Jenkins Valves by the
"Diamond Mark"

Jenkins Valves
SINCE 1864

thing the Sheridan Pressed Brick & Tile Co. believes in is up-to-date equipment tending to reduce production costs, and the entire plant is equipped with modern labor saving machinery and devices. The demand for its product has made it necessary for the company to increase its output, and a new kiln has recently been built to this end.

✱ ✱ ✱

Joseph Keele, manager Ceramic Department, Mines Branch, Ottawa, is on a visit to New Zealand.

T. KENNEDY BACK FROM OHIO TRIP

Thomas Kennedy, of the Dominion Sewer Pipe Co., Swansea, has returned from a trip thru Ohio.

R. H. NEW DRIVES TO NEW YORK

Ryland H. New, President of the Hamilton & Toronto Sewer Pipe Co., Hamilton, Ont., motored to New York, leaving Hamilton, November 14.

CLAY MEN FIND GOOD HUNTING

Andrew Dods and Charles A. Millar, of the Ontario Sewer Pipe Co., Mimico, have returned home from a hunting trip to northern Ontario. They reported game plentiful and brought home their full quota of deer.

PLANTS AT MILTON ARE BUSY

The brick manufacturing industries near Milton, Ont., are busy at present. The different plants are loading cars regularly and find that brick is selling well. The slogan of the Milton brick manufacturers for next year is "bigger and better business."

W. H. FREEBORN RECOVERS FROM ILLNESS

Ald. W. H. Freeborn, Brantford, Ont., manager of the Ideal Brick Co., has been ill since last June. He suffered an attack of typhoid fever which confined him to his room for several weeks. Complications made him an invalid for some time but his many friends will be glad to learn that he is now practically fully recovered.

✱ ✱ ✱

THE BUILDING SITUATION

(Continued from Page 902)

Silica brick has declined from \$30 and \$35 to \$28 and \$31, while chrome brick has been reduced by about \$2 a ton, and magnesite brick, \$5 a ton. Pennsylvania fire clay is selling from \$28 to \$37 a ton, while Ohio material is priced in the local markets at \$28 to \$38.

Construction at Baltimore

November building records at Baltimore show an aggregate valuation of \$1,412,760, as compared with \$1,269,000 in the preceding month. Two-story brick dwellings take the lead in the city proper, with an aggregate of close to \$250,000 for the month. Brick factory work is also growing, and the outlook in this direction for the winter months is encouraging.

Common brick is selling at \$21, \$22 and \$24, out-of-town material bringing the last noted figure. Wholesale, the price is around \$18 and \$19.

Partition tile is priced at \$110 upwards at Baltimore, according to size, while hollow building tile ranges from \$100 to around \$200 for the different standard dimensions. Fire brick is selling from \$75 to \$85. Fire clay of first grade character is around \$20 a ton, delivered.

Of more than passing mention is the building boom now going forward at Frederick, Md., where current work is soaring to

a valuation of over \$2,000,000. Large quantities of buff face brick are being absorbed in this section, and indications for lower freight rates on building materials are leading to considerable preparation for forthcoming operations. A \$1,000,000 hotel is being built in this city.

Pittsburgh Activity Slackening

Building in Pittsburgh during November suffered a slump as compared with October, altho it shows a gain over November of last year. For new construction there were 274 permits issued by the city bureau of building inspection for work to cost \$2,844,947. Of this amount 109 permits for work to cost \$867,567 was for new housing, in which brick, brick-veneer, brick and shingle and brick and stucco predominates, ten or more duplexes being included in the housing list. An indication of a recovery in building is seen in the number of permits applied for at the bureau during the week ending December 4, a total of 83 applications being made, for work to cost \$408,297, nearly double the amount of the previous week.

Home Building Active in Columbus

The Columbus, Ohio, building department issued 331 permits of a valuation of \$625,915 in November this year as compared with 202 permits and a valuation of \$303,445 in November, 1920. For the 11 months of the year the department issued 4,542 permits with a valuation of \$8,870,445 as compared with 2,693 permits and a valuation of \$9,702,260 in the corresponding time in 1920. During November a total of 96 dwellings were licensed as compared with 20 in November last year. These figures do not include the dwellings started in the many suburbs of Columbus which are estimated at 50, making 146 dwelling permits for the month.

At Cleveland

Of particular interest in the Cleveland building situation is the gain in brick construction for November, this being approximately \$500,000 this year over last November. Frame construction, on the other hand, has fallen off about \$100,000. The biggest gains are in school and hotel construction, of which there was none last November, while this year close to 750,000 of this work is provided.

The immediate future is encouraging to brick, tile and other material factors here, since several transactions have just been completed, whereby large construction will be developed shortly.

Settlement of labor questions alone bars progress for the new year, and this not only appears possible, but probable, since both employers and employees are working on agreements for the coming season, months ahead of the usual time. Present wage and working agreements expire March 1. It is probable that agreements will be drawn by an executive committee from the Building Trades Employers' Association and the Building Trades Council, for submission to the respective crafts, which will be an additional time saver.

Chicago Citizen's Committee Wields Mighty Club

When the announcement of the organization of a Citizen's Committee in Chicago to clean up the building situation, was first made, there was much speculation going on as to what club the committee would wield to make refractory contractors and unions to abide by the Landis award. This question, it is claimed, has been solved, when it was learned that banks had refused to loan money on building projects which were to be completed with no regard for Judge Landis' decision. The power of the Citizens' Committee can not be questioned when it is known that some of the biggest business men in the city are members.

Tho the winter season has arrived with its attendant minimum of building, contractors are hopeful that the labor tangle will be straightened out in time for an early start in the spring of 1922.

BEST GRADES NEW JERSEY REFRACTORY CLAYS

FOR

FIRE BRICK—Various grades to suit requirements.

SAGGERS—Clays that will stand wear and tear of pottery use.

SANITARY WARE—Top Sandy Clay.

FOUNDRY USE—Red Spotted Clay.

STOVE LINING—Red Spotted and Blue Sandy Clay.

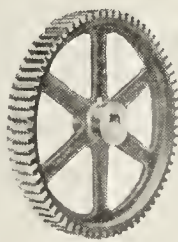
FIRE MORTAR—Ground Fire Clay especially prepared.

Forty years successful experience in catering to above requirements.

The ANNESS & POTTER FIRE CLAY COMPANY

Main Office and Works: Woodbridge, N. J.
New York City Office: Longacre Building

CALDWELL Service



HALF a million dollars' worth of well-selected stock, constantly maintained and an organization keyed up to the theory that plant efficiency is measured by the number of orders shipped on the day of receipt, accounts for Caldwell service. Let us figure on your requirements.

H. W. CALDWELL & SON CO.

LINK-BELT COMPANY, OWNER

CHICAGO, 17th Street and Western Avenue

DALLAS, TEXAS, 709 Main Street

NEW YORK, 299 Broadway





Driving a tack with a sledge hammer!

Think of "patting" down the load in this car with the dipper of a giant steam shovel! And yet that's the kind of gruelling these Easton cars get in this Pennsylvania mining operation, hour after hour, day after day. But they're always on the job—and today are as serviceable as when first installed.

This is one of many examples of why **EASTON CARS PAY**.

It is the result of knowing how to build cars that are correct in design and construction—of insisting upon having a thorough knowledge of conditions to be met—of a study of over twenty-five years of car types that have made good and those that have not. It typifies the advantage of having cars built by a manufacturer long experienced in and with a plant specializing in the building of industrial cars and railway equipment.



*The Mark
of a
Paying Car*

Are you thinking about new cars and equipment? It will pay you to acquaint us with your requirements and learn more about why **EASTON CARS PAY**.

Easton Car and Construction Co.
46 Dey Street New York, N. Y.

Boston
Philadelphia

Chicago

Detroit
Pittsburgh



Minneapolis Men Optimistic

It is encouraging to note the general optimistic tone of nearly everyone concerned in building in Minneapolis. With the possible exception of 1916, the present year will be a banner one in construction for the mill city, is the prediction of City Building Inspector Houghton, who bases his assertion upon the building permit records.

Minneapolis is establishing a twenty-year record in dwelling construction. Conservative estimates are that not less than ten thousand people will be housed by the apartments and single dwellings constructed this year.

Atlanta Establishes Home Building Record

The city of Atlanta, Ga., will probably establish a record for all time in home construction during 1921, to the end of November more than 1,200 new homes having been built in the city. The best previous record was 1,327, established in 1910. If the average of the past three months is maintained during December this record will be surpassed. Atlanta has led the South every month this year in home construction.

Birmingham Situation

The demand for brick for building purposes in Birmingham, Ala., is increasing slowly each week, while the demand for both brick and sewer pipes in other states has increased remarkably during the past two weeks. The market along the Pacific Coast has recently been opened for Birmingham clay pipes. As a result many clay pipe are being shipped to various ports along the Pacific by Birmingham's all water route.

It is generally believed here that Henry Ford will soon secure from the government the Muscle Shoals project. In this event it is predicted there would be a big demand in Sheffield, Florence and Tuscumbia, the three towns near the shoals, for building brick.

Los Angeles in Third Place

Up to November 21 Los Angeles, Cal., still maintained its building pace. For October that city not only held first place but gave Chicago a close run for second place, being only \$700,000 behind the Lake city in the value of permits issued. There is an increased demand for brick houses in the Los Angeles vicinity, and the local companies are running full time and finding great difficulty in keeping the supply ahead of the demand.



ROSTER OF A. F. B. A. CONVENTION

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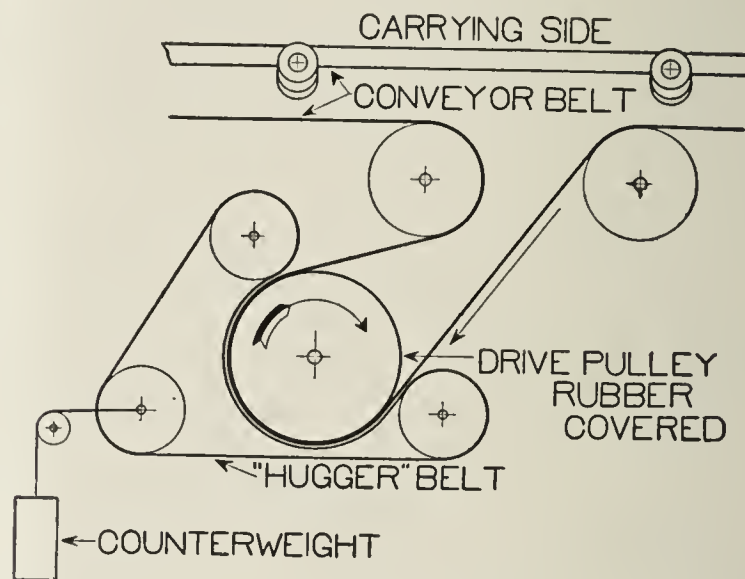
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✱ ✱ ✱

The Koppel Industrial Car & Equipment Co., who are large manufacturers of industrial cars, narrow gauge track materials, etc., with a plant at Koppel, Penna., and several branches thruout the country, have opened a new district office at Kansas City, Mo., located in the Railway Exchange Building.

Mr. Harry C. Kraft, formerly with the New York office, has been appointed manager of the Kansas City District.

✱ ✱ ✱

The Osgood Co. of Marion, Ohio, announces the opening of a branch sales office at 1211 Conway Bldg., Chicago, Ill., Telephone No. State 5960, which will be in charge of Arthur B. Sonneborn as manager.

This announcement will be of particular interest to Osgood customers and contractors in and around the vicinity of Chicago, inasmuch as they will be able to get full information regarding Osgood steam shovels and excavating machinery direct from the Chicago office.

✱ ✱ ✱

In a recent letter to the trade the Bonnot Co., Canton, Ohio, call attention to their 10 ft. dry pan, which has double the grinding capacity of a 9 ft. pan, but requires only 10 per cent. additional capacity. Clay products manufacturers can readily see what this will mean in reducing grinding costs.

The company will be glad to send their catalog describing this machine and others to those who are interested in getting their plants in shape.

✱ ✱ ✱

The Lakewood Engineering Co. of Cleveland, has moved its Philadelphia office from the Widener Building to the Franklin Trust Building.

BRICK and CLAY RECORD

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The EDITOR'S CORNER

DON'T LET UP ON COST REDUCTION

WITHOUT VISION, the Bible tells us, the people will perish. This statement holds true as much today as it did some 3,000 years ago when Solomon spoke it. This situation—this need for vision is evident everywhere, but more so in the clay industry than elsewhere.

In 1913 business was thought to be fairly good. Yet, it has been pointed out that the actual amount of goods sold today is even larger than in 1913. By this is meant not only sales in dollars,

er. Exports in actual volume are said to be 18 per cent. larger than in 1913.

Production in most lines, except in certain raw materials, compares favorably to 1913. Commodity prices average much higher. Even allowing for the country's normal growth, the present volume of business is about as large as it was before the war when people thought times were fairly good.

This seems hardly believable, especially since everybody seems to be complaining about there being no business. The trouble lies, however, in that capacity

It has been pointed out recently that of 75 raw materials, more than 20 are selling below pre-war levels. The average of the whole group is about 23 per cent. above the average in 1913. Still the cost of living is about 70 per cent. above pre-war levels. This is due, to some extent, to profiteering, but for the most part it is the result of excess production and distribution costs.

Business Methods Changed According to Economic Periods

It is often deplored that there is but little sympathy between young men and old men in discussions about business. This is only natural. They have lived in two different business worlds, and they speak different languages and judge by opposing standards. Our fathers lived in a different business world. Most of them had their active careers in the long 30-year period of falling prices following the Civil War, but most of our present active business men lived and worked during the period of rapidly rising prices of the past 20 years. During these two different stages, business methods were altogether different. In the period of rising prices optimism was the business religion. The man who had faith in the future, nerve and imagination, and was willing to take chances, was the man who received Society's great rewards. On the other hand, during the period of falling prices such as that of our fathers, caution, thrift and careful attention to details rather than to bold enterprises were the essentials for success.

Now in Embryo Stage of A New Business Era

The business cycle has been undergoing a great change. We have seen almost two years of falling prices—a period when caution and thrift was again the watchword. Business must now be conducted on different lines than it was previous to 1914 and in the period of



Yes—Brick Were Made in This Manner Once Upon a Time—And Not So Long Ago!

but also as to the quantity of pounds, bushels and barrels of products. Railroad statistics show that about 20 per cent. more goods are being shipped than in 1913. Despite the fact that this year is a poor one as far as coal production is concerned, about the same amount of fuel is being used as in 1913.

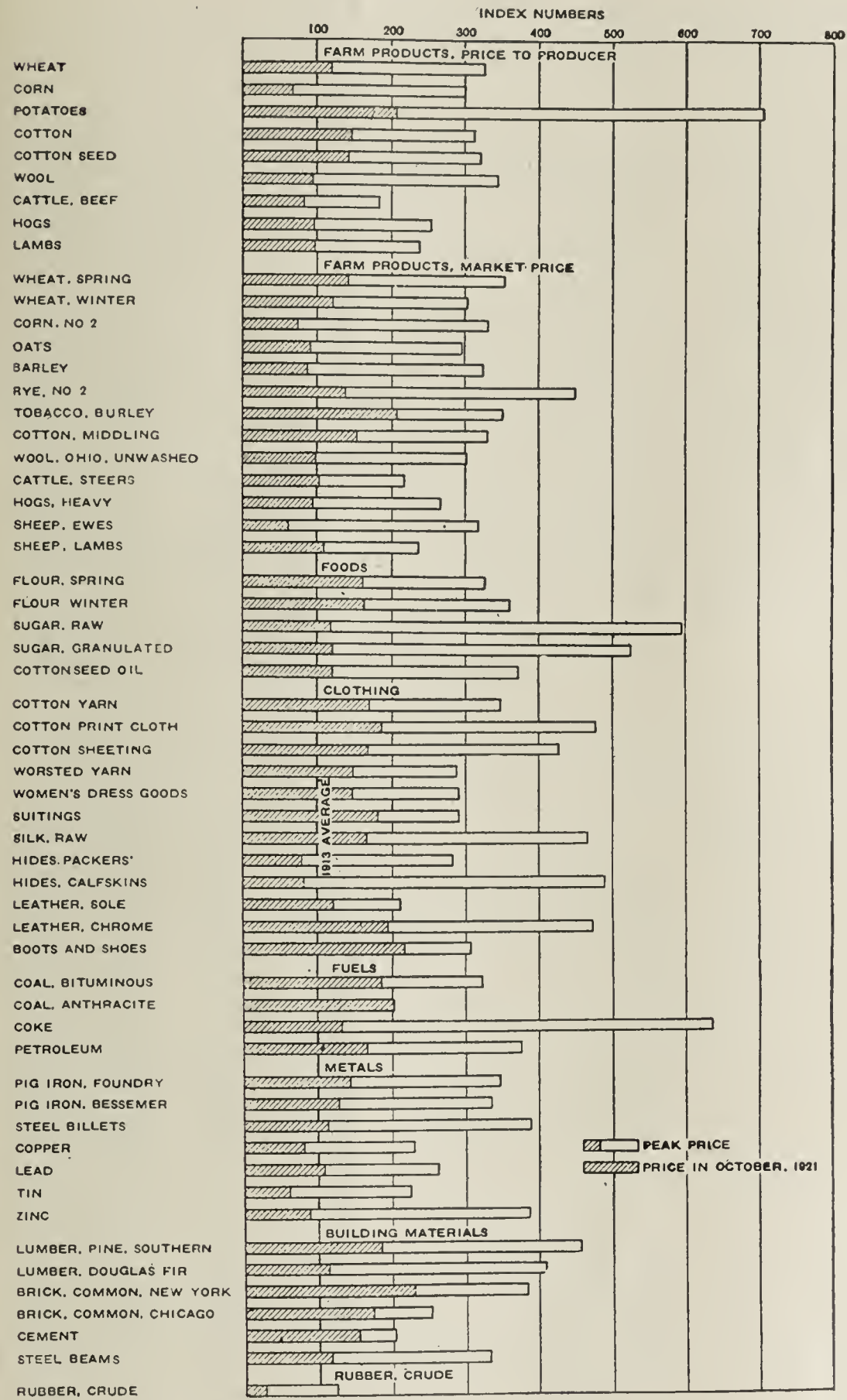
The farmers are selling ten per cent. more grain, and as much cotton as in 1913, while prices are considerably high-

and cost of production have been increased to fill a much larger volume of business than can be maintained. This is beginning to become recognized, and a period of fiercest competition is before us. There is no reason to expect a better condition due to foreign orders. The thing to do is to get costs down and prepare for a great competitive fight.

Prices must be brought into line before business can again be prosperous.

1922 Will Reward Those Who

COMPARISON OF WHOLESALE PRICES AT PRESENT WITH 1920 AND PREWAR.
(Relative production of 1913=100.)



1914 to 1918. If history is to repeat itself we are still in a period of falling prices. Obviously, during such a period, costs must be lowered to keep pace with economic developments. Never was there a greater need for vision to study

the requirements for the future than right now when we are in the embryo stage of a new era.

The Old Methods Must Go

The accompanying photograph will

evoke a smile from every reader's lips yet the day of hand labor and crude methods in brick manufacture lies within the memory of all of us. Clay products manufacture has developed considerably during the period of our lives, and those producers who failed to have vision were soon forced out of business. The mortality rate in the clay industry is still enormously high.

In a certain city in Pennsylvania there were, not so long ago, 33 separate clay products concerns. Today there are only three. In a city in Illinois there were at one time 15 clay plants, there are now only three. Ruins of kilns and kiln stacks and abandoned clay pits thru all parts of the country are landmarks or tombstones for many concerns who lacked vision and could not stand the pace of development in the clay products industry.

The present economic situation is intensifying the weeding out process in clay product plants.

Lower Costs or Be Weeded Out

Next year there will be a great deal of building. But the public is going to exercise a great deal of thrift in every purchase it makes. Lowered costs will be demanded and will be obtainable from those manufacturers whose vision enabled them to realize the situation and prepare for it.

The ratio of the number of men required to produce a thousand brick is becoming less as years go on. Check up your plant and see whether during the past five or ten years your labor ratio per thousand or per ton has been lowered. If not, study your plant thoroly. The most propitious time to give your production methods and cost consideration is the present. Delay no longer. The campaign for cost reduction is not nearly over.

To quote a recent statement from a well known statistical organization: "It will be a matter of at least a year and perhaps more before clients can let up on their campaign for cost reduction!"

Have Reduced Their Costs!

Paving Brick Shipments Increase 50%

Fine Spirit of Splendid Harmony Shown at Meeting of Eastern Paving Brick Manufacturers Association—Old Officers Reelected

REPRESENTATIVES of more than 25 paving brick plants were in attendance on the morning of December 13 when the Third Annual Meeting of the Eastern Paving Brick Manufacturers' Association was called to order by President R. L. Winslow at New York.

The morning was taken up with a general meeting at which were read the Annual Reports of secretary and chief engineer William C. Perkins, Edward E. Duff, Jr., district engineer and J. E. Griffin, office engineer.

Will P. Blair and M. B. Greenough, the officers of the National Paving Brick Manufacturers' Association, were also present and conveyed messages to the eastern association.

Informal talks were also made by C. P. Mayer and O. W. Renkert. R. W. Steere, vice-president of the American Dressler Tunnel Kilns, Inc., was given the privilege of the floor and answered quite a number of questions put to him regarding the workings of the tunnel kiln and particularly its adaptability for use in the burning of paving brick.

W. P. Blair Speaks to Delegates

Thruout the meeting a spirit of splendid harmony was displayed and also of real practical cooperation between the National and the Eastern paving brick associations. Will P. Blair aroused considerable interest in his informal talk regarding the possibilities that exist for the extended use of vitrified paving blocks for use in bridges, sewers and culverts. Mr. Blair exhibited some photographs showing brick work on bridges and culverts that has been giving splendid service for 23 years. Mr. Blair is making a thoro investigation of this subject and expects to have something quite definite and extensive regarding it in the near future.

Committees were appointed on the morning of the first day and the afternoon of the 13th was given over entirely to the meeting of these various committees, which reported at the meeting on the morning of the 14th. Following the reports of the various committees, it was decided to continue for the present the assessment of three cents per yard to defray the expense of the association's promotional work, and it was left to the discretion of the Board regarding the advisability of putting on three or more engineers for field work. There was considerable sentiment in favor of more aggressive activity on the part of field engineers and several of those present expressed their desire to see an increase in the assessment.

Will Continue Publicity Work

It was also decided to continue the advertising and publicity work which the association has been doing and also to add a Monthly News Bulletin, which will be mailed to about 1,500 engineers in the eastern territory who are interested in paving work. The Constitution and By-Laws were changed so as to permit of one additional vice-president in order to give representation to each of the separate territories that make up the Eastern Division.

One of the most important transactions on the morning of the 14th was that taken following the reports of the Committee on Traffic and Freight Rates of which D. R. Potter was chairman. O. W. Renkert referred to the action of the Ohio Association having decided to employ a firm of attorneys in Washington, D. C., to represent the paving brick interests be-

fore the Interstate Commerce Commission. Following Mr. Renkert's talk, the convention decided to join with the Ohio Association in this work and also to invite the paving brick manufacturers of Indiana and Illinois, as well as the far West, to join this movement.

Hold "Get Together" Meeting

On the evening of December 13 a "get together" dinner was held at Healy's which has come to be the annual rendezvous of this association. There were no set speeches, but the evening was given over to general merriment and good fellowship. The special guests present at the dinner were the following:

Honorable H. L. Sisson, Head of the New York State Highway Department, Charles V. Platt, James S. Sturdevant, John H. Huber, all of the New York State Highway Department; E. J. Mehren, Editor of Engineering News Record; H. Elting Breed, Consulting Engineer, New York City.

All officers were reelected and will serve in their present capacity for another year. They are, president, R. L. Winslow,

Total yardage shipment of each member of the Eastern Paving Brick Manufacturers' Association from November 1, 1920, to November 1, 1921; also yardage shipped from March 1, 1919, to November 1, 1920.

COMPANY	SHIPMENTS		SQUARE YARDS	
	1919	1920	1921	Total
Allegheny Valley Brick Co....	7,300	33,409	20,529	61,238
American Vitrified Brick Co..	17,359	9,269	.....	26,628
Binghamton Brick Co.....	10,029	14,465	13,245	37,739
Burton Townsend Co.....	3,050	12,949	.....	15,999
Clydesdale Brick & Stone Co.	121,806	106,349	208,171	436,326
Corry Brick & Tile Co.....	9,268	7,027	4,376	20,671
Globe Brick Co.....	17,015	25,145	66,614	108,774
Hammond Fire Brick Co.....	35,303	35,530	55,713	126,546
Hocking Valley Brick Co.....	.....	5,272	5,067	10,339
Jamestown Shale Paving Brick Co.....	40,471	4,681	.....	45,152
Kushequa Brick Co.....	2,821	1,029	350	4,200
Layton Fire Clay Co.....	.....	8,720	51,211	61,931
Mack Manufacturing Co.....	239,601	215,850	220,410	675,861
C. P. Mayer Brick Co.....	26,450	61,883	78,748	167,081
McAvoy Vitrified Brick Co....	19,601	4,931	2,050	26,582
Metropolitan Paving Brick Co.	180,444	243,644	302,824	726,912
Morgantown Brick Co.....	3,200	.....	.....	3,200
Patton Clay Manufacturing Co.	48,633	104,549	174,830	328,012
Penn Brick Corporation.....	3,710	6,612	34,070	44,392
Pennsylvania Clay Co.....	203,717	128,870	.....	332,587
Shawmut Mining Co.....	62,619	72,976	20,532	156,127
Jos. Soisson Fire Brick Co....	8,462	13,333	2,265	24,060
Sterling Brick Co.....	36,793	42,813	98,215	177,721
Thornton Fire Brick Co.....	10,112	30,867	29,313	70,292
Toronto Fire Clay Co.....	42,158	14,795	58,617	115,570
Westport Paving Brick Co....	11,436	19,660	71,047	102,143
Windber Clay Manufacturing Co. ....	.....	975	.....	975
Totals.....	1,161,358	1,225,523	1,518,197	3,905,078

The shipments increased 289,600 square yards in 1921 as compared with 1920. There were four companies, now not members of the Association, who in 1920 shipped 143,795 square yards. Therefore, the present members shipped last year 1,081,728 square yards, making this year's gain about 50 per cent.

280 Madison Ave., N. Y.; treasurer, R. T. Hutchins, Wheeling, W. Va.; secretary and chief engineer, Wm. C. Perkins, Lincoln Bldg., Philadelphia.

The chairmen of the standing and other committees are as follows:

Finance and Auditing, C. C. Blair; Organization and Promotion, Wm. H. Lucktenberg; Reporting of Contracts, R. T. Hutchins; Advertising and Publicity, W. W. Cunningham;

Uniform Blanks, Contracts and Cost System, R. T. Hutchins; Specifications, C. P. Mayer; Complaints and Suggestions, Service and Trade Betterment, Mr. McFadden; Membership, Constitution and By-Laws, D. R. Potter; Traffic and Freight Rates, D. R. Potter; Nomination and Resolution, T. J. Brett.

Brick, average common, New York and Chicago	199
Cement, Portland, net, without bags, to trade f. o. b. plank (Buffington, Ind.)	175
Freight rates—	
Brick, common, Brazil, Ind., to Cleveland, Ohio	204
Cement, Universal, Pa., to New York	179
Building labor:	
Union scale, weighted average, eight occupations, frame houses (3)	197
Union scale, weighted average, eight occupations, brick houses (3)	193
Common labor	130
Construction costs:	
Cement buildings (Aberthaw Construction Co.)	161
Coal:	
Price, bituminous, Pittsburgh	186
Price, anthracite, New York tidewater	198
Union wage scales, about	173
Nonunion scale, about	136
Freight rates	187-209
Metals:	
Prices:	
Pig iron, Bessemer	128
Steel billets, Bessemer (Pittsburgh)	115
Day labor, scale, United States Steel Corporation	150
Railroad, average receipts per ton-mile	177
Bureau Railway Economies estimate of railway wages based on average annual compensation, third quarter	226
General estimate all union wage scales by Prof. Wolman	189

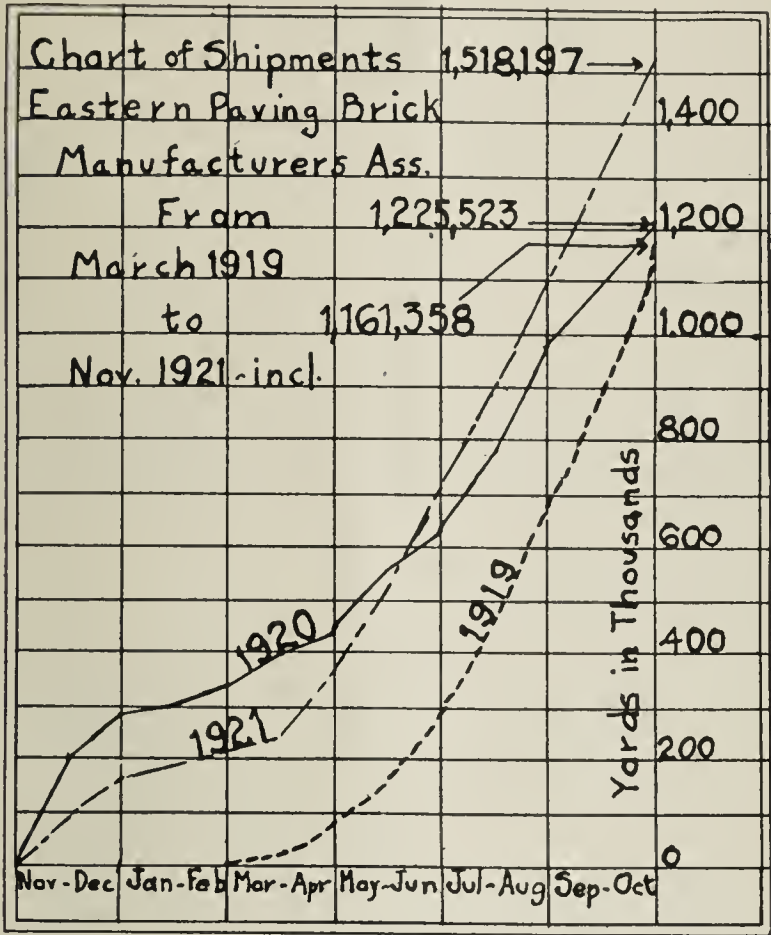


Chart Showing Number of Square Yards of Paving Brick Shipped in 1919, 1920 and 1921.

INDEX NUMBERS OF VARIOUS COMMODITIES

Reprinted from the "Commerce Reports," the following approximate index numbers as of August, 1921, based upon 100 for 1913 will be found interesting:

Cost of living:	
Department of Labor (May survey)	180
National Industrial Conference Board	165
Average price to producer, farm crops	109
Average price to producer, live stock	113
Average wholesale price, foods	152
Average retail price, foods	155
Wheat and flour:	
Wheat, average to producer	128
Live stock and meats:	
Pork—	
Hogs to producer	116
Beef—	
Cattle, average to producer	91
Wholesale, carcass beef at Chicago	124
Wages in meat packing (Department of Labor Investigation)	186
Freight rates, dressed beef, Chicago to New York	214
Hides and leather:	
Hides, green, salted, packers, heavy native steers (Chicago)	76
Wholesale, boots and shoes, men's vici calf, blucher—Campella (Brockton)	225
Freight rate, shoes, Lynn, Mass., to Chicago	210
Wage scales in shoe industry (Massachusetts), about	200
Cotton:	
To producer	105
Wool:	
To producer	92
Freight rate, clothing, New York to Chicago	210
Wage scale in mills, about	200
Building and construction:	
Prices—	
Lumber, average pine and Douglas fir (at the mill)	128

The wage indexes refer mostly to wage scales not the earnings, which necessarily also depend upon regularity of employment.

TO HOLD HEARINGS ON R. R. PROBLEMS

Beginning January 11 the Interstate Commerce Commission will devote six weeks to hearings and investigations into the present level of all transportation rates. Both sides of the question will be thoroly reviewed and it is thought that a better understanding of the handicaps under which business and industry is laboring and the difficulties of the railroads due to high operating costs and light traffic, will develop.

Shippers will be given a chance to present the evidence in their cases and their claim for lower rates and thereafter the carriers will be given an opportunity for rebuttal, and oral arguments for all parties interested will conclude the hearing. It is hoped that difficulties regarding the rate situation will be solved by this method.

CONVENTIONS IN PROSPECT

- January 11 and 12—Nebraska Brick & Tile Association, Lincoln Hotel, Lincoln, Neb.
- January 24—Kentucky Clay Products Association, Louisville, Ky.
- January 23, 24, 25, 26, 27 and 28—National Brick Manufacturers Association, Claypool Hotel, Indianapolis, Ind.
- January 25 and 26—Hollow Building Tile Association, La Salle Hotel, Chicago, Ill.
- January 30, 31 and February 1—Common Brick Manufacturers Association, Hotel Statler, St. Louis, Mo.
- February 7, 8 and 9—Canadian National Clay Products Association, Carls-Rite Hotel, Toronto, Canada.
- February 15 and 16—Iowa Clay Products Manufacturers Association, Des Moines, Ia.
- February 27, 28, March 1 and 2—American Ceramic Society, St. Louis, Mo.

Of What Good Is an Appraisal?

Among Other Things It Enables You to Have Control of
Your Property—To Know What It Is—Where It Is—When
It Is—Whether It Is Increasing or Decreasing in Value

By H. B. Hall

American Appraisal Co., Milwaukee, Wis.

WHILE THE PURPOSE of this article is to acquaint you with the necessity and possibility for better records of property costs and values, depreciation and depletion for federal tax purposes, we want to preface it by calling to your attention the theme around which the entire appraisal gospel is constructed.

It is this—to have control over your property (just another form of money) to know what it is, where it is, whether or not it is increasing or decreasing in value, how fast and why, is second only in importance to knowing how much cash you have in the bank.

Appraisals Are Essential

Appraisals stand in the same relation to your property dollars as your cash book and ledger does to your currency dollars, and in a sense the one is just as essential to the safe conduct of a business as the other.

If industry in general had been soundly converted to this gospel and had lived up to its teachings, the confusion and discord incident to invested capital and depreciation problems which came with the income and excess profits tax would have been averted, and the man who was content to know the "total cost" of his plant only, would not be up against the proposition which confronts him today.

The "total cost" of a plant as revealed by the books of account, is of course interesting, even if at times depressing information to have, but beyond that fact it tells you nothing of at least five essential things you ought to know. Made up as it is of labor costs, plus bills for brick, bills for lumber, bills for steel, bills for cement, bills for machinery, piping, pulleys, shafting, belting, tools and furniture, bills from architects and engineers, contractors' profits, sub-contractors' profits, attorneys' fees, and what not, it gives you no information as to how to set up intelligent plant accounts, how to compute departmental depreciations, how to recover any part of the investment a fire may wipe out, and how to keep your banker satisfied that your plant is worth your recorded investment in it.

What Appraisal Service Does

Appraisal service goes further than merely to answer the question: "What is the value of my plant?" It reveals the value of every item that goes to make up the total value, and segregates these values into the groups which are absolutely necessary if the promise of intelligent plant accounts, accurate costs, adequate protection and financial strength is to be fulfilled.

The difference between appraised values and book values is that the one is based on actual examination of the property and the other on examination of the bills for it.

Appraisals made for the purpose of establishing the *value* of the property at the time of the appraisal, are based upon the costs to replace the property under market conditions

current at the time. From this is deducted the accrued depreciation based on condition and remaining serviceable life, and the result is the sound or fair market value to a going concern.

Aid in Compiling Tax Statements

Such appraisals are used for the placing and collection of fire insurance, sale of property, bond issues, stock issues, mergers, reorganizations, or any other purpose where *value* is the thing sought, but if made since 1913, they have no place in federal tax procedure, in which "investment" and "value as of March 1, 1913" are the prime factors.

The service and records (if authentic) of an appraisal organization, however, may prove of real value to a taxpayer, both in the establishment of his invested capital, and in the determination of properly deductible depreciation under the law and regulations. The rendering of such service should not be termed an appraisal, but rather a "report on property costs and 1913 values."

The use of the records and service of an appraisal organization in federal tax procedure can only be intelligently considered if the use for the determination of invested capital is clearly segregated from that for computing depreciation. We will consider invested capital first.

Books Not Always Accurate

Invested capital is the actual cash or cash value of property (at the date of payment) paid into a business, and the paid-in or earned surplus and undivided profits.

The present worth of assets as shown by the appraisal or in any other manner *has no bearing on invested capital*.

Fair market value as of March 1, 1913, *has no bearing on invested capital*.

The books of account of a corporation are assumed to record the facts, but it is a matter of common knowledge that if books of account were the only acceptable evidence as to invested capital, gross injustice would be done to those concerns who thru conservative, but none the less erroneous accounting practice have depleted their invested capital by excessive depreciation and by charging certain expenditures to expense that should have been capitalized.

How Excessive Depreciation Is Handled

The Internal Revenue Department clearly recognizes this possibility of injustice and provides under Article 840, Regulations 45, that:

"Excessive depreciation heretofore charged off on property still owned and in use, if it is now shown by satisfactory proof to have been excessive and such excess is substantial in amount, whether or not disallowed by the commissioner as a deduction from net income, may be restored to the surplus account."

Also:

"Amounts which have been expended before January 1,

1917, for the acquisition of plant, equipment, tools, patterns, furniture, fixtures, or like tangible property, having a useful life extending substantially beyond the year in which the expenditure was made, and which have been charged as current expense may (less proper deductions for depreciation or obsolescence) be added to the surplus account, when such assets are still owned and in active use by the corporation during the taxable year."

Appraisals Reveal Truth of Accounts

In order to take advantage of these provisions, it is incumbent on the taxpayer to submit evidence satisfactory to the department, that the books of account do not correctly reflect the invested capital.

The preparation of this evidence is in part an appraisal problem. The marshalling of the evidence or facts furnished by the appraisal organization, however, into the shape of amended returns, or claims for refund or abatement is an accounting problem and should be handled by an accountant.

The service of the appraisal organization in this connection comprises the listing, describing, and classifying of the property in accordance, as far as possible, with their standard appraisal practice, the determination of dates of acquisition of the various units of property and their pricing at *actual cost*.

The report is summarized by taxable years, and a special explanatory report in which is reconciled the discrepancies between the plant account as shown by the books and as shown by the investigation accompanying it.

The Difficulties Encountered.

If this procedure were as simple to carry out as it is to describe, the proposition would resolve itself into one that any accountant, professional or amateur, could successfully handle.

If buildings, additions to buildings, machinery, machinery installations, patterns, drawings, belting, shafting, millwright work, piping, trucks, trackage, wiring, installation of wiring, land grading, tools, molds, dies, jigs, and a hundred and one other items which go to make up plant investment—if these were bought at separate and distinct individual sales, and the purchases covered by separate and distinct invoices for each item, and the dated invoices each pasted on the item itself at the time it was purchased, and also if when items were discarded the invoices had been carefully peeled off, and those for the different years since the incorporation of the business carefully pinned together and filed away—if this were the case, there would be no need for the service and records of an appraisal organization to supply the *evidence* of poor bookkeeping, if such is claimed, which Uncle Sam requires.

Many Problems to Contend With

Unfortunately, however, it is not the case. Buildings are frequently erected piecemeal, and the records of costs are many times a jumbled mixture of brick purchased, brick manufactured (and in one case we encountered) brick stolen, lumber purchased, lumber left over from a building torn down, outside labor, regularly employed labor, and so forth.

The same is true to a varying extent in the case of machinery and equipment.

Installation charges are seldom properly capitalized; the cost of machinery or equipment erected in whole or in part by the taxpayer is seldom accurately kept; freight charges not properly allocated to the respective items of equipment, and even the records of actual costs of machinery and equipment purchased are lost track of, and so to the appraisal organization comes "the call from Macedonia to come down and help us"—help unscramble the eggs, supply

the missing links, and bring order out of chaos.

The appraisal organization working with the existing property as a base and in cooperation with the accountant tackles the problem with the zest of the scientist who digs in the ruins of an ancient city and from them constructs the story of its inhabitants, the difference being, however, that the latter can draw on his imagination and indulge in theory, while the appraiser must confine himself wholly to provable facts.

Must Dig Up Many Essential Facts

To illustrate: the appraiser may find an item of property, a machine for instance, the specifications of which he carefully writes up, takes them to the accountant and tells him to apply the cost, and date of acquisition. The accountant, after some investigation, states that so far as the books are concerned, there is no such animal as that described by the appraiser in the plant—this regardless of the fact that the appraiser has just seen it. It, therefore, devolves upon the appraiser or investigator which he now becomes, to procure the required information from the best available sources, aside from the books, or invoices, which the accountant also asserts are missing. He may find that the superintendent of the plant recalls that he was unable to be present at the time the machine was unloaded from the car, and that the reason for his absence was the advent of twins at his home. The age of the twins offer the clue to the date of acquisition and a review of memoranda in the archives of the concern for a reasonable period before and after the date, corroborates the information of the superintendent, and the date of acquisition of the machine becomes a provable fact, but the actual cost is still to be established.

Appraisal Companies Keep Many Records

If a further search of the records on or about the date fails to reveal this, the appraisal organization resorts to its records and establishes the fact that on or about the date of acquisition of the machine, it appraised a machine of identically the same specifications for another concern and secured a quotation from the manufacturer at that time, which quotation, in the absence of proof to the contrary, is assumed to be the cost of the machine to the taxpayer.

In such cases as substitutions are made from the records of the appraisal organization for actual costs, the circumstances surrounding the case must be a matter of record and available to the taxpayer or the department as required, and the authenticity of the appraisal organization's records becomes a matter of prime importance.

Can Solve Any Problem Satisfactorily

The ramifications which service of this character takes, are numerous and various. The above is probably typical of the simpler problems which are encountered, but no problem is impossible of reasonably satisfactory solution. The main thing is to be able to present the facts from the evidence obtainable as to the investment in the property by taxable years, in accordance with the regulations of the department and the presentation of these facts in logical form for their review and final decision.

The matter of determining depreciation deductible from income is a matter which in importance frequently overshadows invested capital problems.

The income tax law went into effect March 1, 1913. It was on that date that business went into partnership with the Government and division of profits with the Government began.

Taxpayer Can Decide Value of Property

The taxpayer had the right at that time to establish the *value* of his property for the purpose of determining the

total amount to be recovered by depreciation allowances, thus protecting himself against confiscation on the part of the Government of a certain portion of this *value* by erroneous computation of profits.

The taxpayer still has this right. Article 164, Regulations 45, reads as follows:

"The capital sum to be replaced by depreciation allowances is the cost of the property in respect of which the allowance is made, except that in the case of property acquired by the taxpayer prior to March 1, 1913, the capital sum to be replaced is the fair market value of the property as of that date. In the absence of proof to the contrary it would be assumed that such value as of March 1, 1913, is the cost of the property less depreciation up to that date. To this sum should be added from time to time the cost of improvements, additions, and betterments, the cost of which is not deducted as an expense from the taxpayer's return, and from it should be deducted from time to time the amount of any definite loss or damage sustained by the property thru casualty, as distinguished from the gradual exhaustion of its utility, which is the basis of the depreciation allowance."

Cost and Value Not Synonymous

Note that, "in the absence of proof to the contrary," it will be assumed that such values as of March 1, 1913, is the cost of the property less depreciation up to date.

In other words, if a concern built a plant in 1907, at a cost of \$100,000, and made arbitrary depreciation charges of 10 per cent. per year, and on March 1, 1913, the resulting *book value* was \$40,000, that amount would be assumed to be "fair market value" as of that date, and future depreciations would have to be based on that sum.

The terms *cost* and *value* are not synonymous, neither are the terms depreciation and amortization.

Arbitrary theoretical depreciations employed for convenience in accounting and for the purpose of amortizing the property accounts as rapidly as earnings will permit are not, and never have been, at all indicative of actual lessening in worth of "fair market value."

What is "Fair Market Value"

The "fair market value" of property to a going concern as of any date, is its *cost of reproduction* as of that date, less the accrued depreciation resulting from age and service, condition of maintenance, and remaining serviceable life.

This definition of "fair market value" has thru long usage become the standard accepted definition for all purposes where the term value is considered in its true sense.

Appraised sound values arrived at under the above definition have for more than a quarter of a century been used as a basis for the adjustment of fire losses, the purchase and sale of property, mergers, reorganizations, bond issues, settlement of estates, and the like, and that they represent fair market values cannot be successfully disputed.

Those concerns who happen to have had an authoritative appraisal made on or about March 1, 1913, are in possession of the "proof to the contrary"—the incontrovertible evidence that "cost of the property less depreciation to date" as shown by the books does not necessarily represent the "fair market value" as of March 1, 1913, and they are using it or should use it for computing depreciation in their income tax returns.

The Use of Values and Costs

The preparation of a report on values now, but as of March 1, 1913, comprises the listing, describing, and classifying of property in much the same manner as for invested capital purposes, but that part of it proven to have been in existence prior to or at March 1, 1913, may be valued in accordance with market conditions at that date. In such

cases as this, where value exceeds costs, depreciations computed on it will, of course, be higher than if based on costs, and the authenticity of the records and the reputation of the organization supporting such a value must be subject to such test as the Department may require.

An interesting as well as important sidelight on the use of values as of March 1, 1913, in lieu of actual costs as a basis for depreciation is set forth in Article 844, Regulations 45, which reads in part as follows:

"Where depreciation or depletion is computed on the value as of March 1, 1913, or as of any subsequent date, the proportion of depreciation or depletion representing the realization of appreciation of value at March 1, 1913, or such subsequent date, may, if undistributed and used or employed in the business, be treated as surplus and included in the computation of invested capital. For the purpose of computing invested capital depreciation or depletion computed on the value as of March 1, 1913, or as of any subsequent date, shall if such value exceeded cost, be deemed a pro-rata realization of cost and appreciation, and be apportioned accordingly."

Regulations Governing Depletion

Or, in other words, invested capital is not depleted by the depreciation or appreciation resulting from the use of 1913 values in lieu of costs as a basis for depreciation.

The Regulations governing the treatment of depletion which, generally speaking, differs from depreciation only in the respect that it represents a progressive and permanent lessening in worth or loss, rather than one which may be arrested or restored thru maintenance, do not differ widely from those governing depreciation.

Computation of the invested capital of concerns whose property in whole or in part consists of natural deposits, must include proper allowances for depletion of those deposits, and as in the case of depreciation adjustments may be made to surplus for excessive or insufficient depletions written off in prior years. The amount permitted to be recovered thru depletion charges is the value of the deposits at March 1, 1913, if acquired prior thereto, or cost (or value at time of discovery) if acquired since that date, also Surplus is not reduced by reason of the use of *value* as of March 1, 1913, in lieu of cost.

All Value Must Be Substantiated

As in the case of buildings and equipment, any value placed on property subject to depletion and any statement as to the progress of such depletion—the periodical amount—must be capable of substantiation and must be the result of an exhaustive study of all of the factors having a bearing on it.

The methods which must be employed in the preparation of depletion reports are quite specifically set forth in the Regulations.

The factors to be considered are, the total quantity of the deposits, their average quality or grade, the expected percentage of recovery, the probable operating life of the deposit, the cost of production exclusive of depreciation and depletion, expected average selling price during the operating life, and the rate of profit commensurate with the risk for the particular deposit.

Many Interesting Problems Encountered

These factors are determined from past operating experience if the deposits have been sufficiently developed to permit it, and if not, they must be deducted and the deductions supported by the best evidence obtainable—an easy thing to state, but like the reformation of degenerate plant and equipment accounts, a difficult, even if highly interesting thing to accomplish.

Space limitations forbid our elaborating on the interesting problems encountered in depletion investigations, and the necessity for adding the attributes of the sleuth to that of the engineer in the preparation of reports which will stand any test to which they may be subjected, as in the case of buildings and equipment the statistical and analytical data of the appraisal organization is an invaluable aid.

Uses of Appraisal Service Many

The foregoing is rather an abbreviated description of only one use to which appraisal service is put. It is not our wish to over-emphasize its appeal to industry from a tax reducing standpoint, altho, of course, that is the result frequently accomplished.

The thing we have tried to get across is the penalty suffered by business thru attempting to establish and maintain records of property costs and values without frequent and competent examinations of the property itself—a periodical or continuous lining up of "book values" with real or visible values.

The Revenue Acts made necessary by the war brought

this home to property owners more effectively in a year's time than all of the appraisal propaganda privately spread for 25 years prior was able to bring about.

Prove Book Values By Appraisals

Statistics on the subject are probably not available but a comparison of the taxes paid by concerns thruout the country who had made it a practice in the years prior to 1913 (and there were many of them) to periodically adjust their book values to harmonize with the facts as revealed by appraisal service with those who permitted their permanent assets accounts to go it alone, to rise and fall with the exigencies of the business, would be highly interesting, and we would hazard the guess, somewhat startling.

While the course has been a trifle expensive, the education industry has received in property dollar accounting thru the Revenue Laws and Regulations may be productive of more uniform practice in the future than in the past in the treatment of this somewhat neglected subject, which was and is a thing much to be desired.



1920 Building Conditions May Again Prevail in N. Y.—Many Homes Still Needed

RECENT UNSEASONABLE DEVELOPMENTS in the building material production and distribution markets are ascribed by the current Dow Service Daily Building Reports to an almost general misapprehension as to the scope of the local building construction year just ahead.

After the recent up-turn in certain building material prices a slump came. Even in the week just closed wood lath dropped off 50 cents a thousand, neat wall plaster \$1, finishing plaster in bags \$1.50 and in barrels, 50 cents on the carton. There are slipbacks in metals. In fact, the only consistent stability commensurate with the demands of the immediate future has been in lumber, but even there the wholesale market has weakened in certain woods. The only upward movement of the current lists is noted in FAS quartered oak flooring, white clear plain oak flooring and select white plain oak flooring material, all advancing \$5. Cement is slightly firmer at its new low level and common brick is showing more strength at its new low post-war level established last week at \$14, wholesale to which must be added, for delivery base, cost of handling, haulage and ten per cent.

Repetition of 1920 Conditions Possible

The public is demanding lower prices of building materials and of construction costs, notably wages of building artisans, but instead of backing up its demands by a united cessation of all construction until it gets what it wants, it is creating a market for high priced materials and high priced labor such as has never before been known. In consequence, The Dow Service believes the building public of a large section of the Atlantic seaboard is headed for a price trap in 1922, very much like that of 1920.

Prospects for 1922 Good

A survey of building construction conditions in New York has just been completed by the Building Trades Employers' Association. According to the figures given out by Samuel B. Donnelly, secretary, there are housing accommodations either under construction or to be built in 1922 sufficient to take care of 22,540 families. The table below is arranged to show the difference between the prospective building material demand as

it will present itself on January 1, 1922, and as it will loom up just a few days before September 1, 1922:

Actually under way to be finished January 1, 1922		To be finished by September 1, 1922	
	Kind of Building		
189	1 story brick dwelling	517	
165	2 family brick dwelling	545	
973	1 family frame dwelling	2,563	
160	2 family frame dwelling	548	
114	Apartments or tenements	446	

New accommodations will be ready for 9,485 families on January 1, but by September 1, 1922, accommodations will be ready for 13,055 additional families. Add to this total whatever additional house building projects that are drawn up and contracted for after 1922 actually arrives, and it is quite apparent that whatever building consumption accrued in this market since last February when the tax exemption ordinance was passed by the Board of Aldermen, will be considerably multiplied by 1922 building requirements, especially should the exception ordinance extension be deferred until the last minute before its expiration in April.

The U. S. Census gives the total number of homes on Manhattan island for 1920 as 525,154; Brooklyn, 453,587; Bronx, 166,260; Queens, 109,559; Richmond, 23,781. Estimates based on these figures in January of this year before the tax exemption ordinance was passed fixed Manhattan's quota to meet the housing shortage for the forthcoming two years at 530,000 habitations, Brooklyn at 480,000; Bronx at 200,000; Queens at 115,000 and Richmond at 30,000. By September, 1922 there will be these habitations: Manhattan 527,000; Brooklyn, 462,131; Bronx, 171,894; Queens, 112,370 and Richmond 26,598.

According to this estimate that leaves for builders entering the 1922 construction market, and therefore not included in the Building Trades Employers' Association survey, to provide 3,000 homes for Manhattan, before full saturation point is reached, or total elimination of the housing shortage is accomplished, 18,000 homes for Brooklyn, 28,106 for Bronx, 3,000 for Queens and 4,000 for Richmond.

Long before full saturation has been reached, the rush of home building will be diverted to commercial construction which is crowding more eagerly to the fore every day that the foreign exchange situation becomes improved.

Oil Cuts Burning Cost in Half

Plant of James Cornhill Sons, Ltd., Chatham, Ont., Change
from Natural Gas to Oil—New Type of Burner Developed
Doing Away with Improper Atomizing and Smoke Nuisance

By A. L. McCready

FUEL OIL BURNING EQUIPMENT—the first to be introduced in Canadian brick plants, is now in operation at the plant of Jas. Cornhill Sons, Ltd., Chatham, Ontario. This installation was accompanied by a saving of one-half the time required for burning than was formerly necessary when natural gas was the fuel used, and a saving of considerably more than one-half in fuel cost. This record was made



Kiln With Oil Burners in Place. F. N. Brooker, President, Brooker Engineering Co., Shown Adjusting Burner, and Ed. Cornhill, President of Jas. Cornhill Sons, Ltd., Standing to the Right.

while adjustments and tests were being made in the installation of the equipment—conditions quite unfavorable for a close comparison.

The Jas. Cornhill Sons, Ltd., manufacture stock (common) brick which are burned in up-draft kilns. The equipment used on a kiln of 400,000 brick consists of 30 burners—15 on a side. The perfection of these burners and equipment is the result of seven years' patient labor on the part of F. N. Brooker, who set out with the idea of adapting one of the fuel oil burners made by his company to the purpose of burning clay products.

Develop New Type Burner

The result of the experiments made by Mr. Brooker is a new type of burner, making use of a combination of steam and oil in its operation. The same service that generates steam for the brick dryers is extended to the kilns and attached to the burners. This obviates the necessity of a plant for generating air as used on a high pressure air and oil burner.

As a whole the equipment is of a very simple type. The burner is of the needle valve type, is self-cleaning, and is considered better than the ball valve type which is apt to clog. The fuel oil is received in car lots and conveyed to a large tank by gravity. From this storage tank the oil is pumped into a gravity or pressure tank housed in a pumping station, where the gravity tank has an elevation giving a

14-foot fall to the oil burners on the kiln. This elevated tank affords the manner of delivery of fuel to the kiln.

Two pipes pass along the front of the kiln opposite the center of the arches. One pipe conveys oil and the other steam. Valves on these two pipes connect with the burners, where a third valve controls the feeding of the fuel. Here the oil unites with steam and under high pressure is atomized and can be thrown the extreme length of the kiln.

Oil is Always Cleaned

The pump is equipped with a double strainer which assures the oil being free from dirt at all times. The strained oil then enters the gravity tank, where a sufficient quantity is stored to keep the fires burning for three hours, should it become necessary to close down the pump in an emergency.

With the exception of the pump between the storage tank and feeder, the handling of the oil is by gravity from the time it leaves the tank on the railway siding until it reaches the burner at the base of the kiln. It is around the burner that the success of this mode of burning oil is centered. Home-made oil burners have been experimented with in brick plants, but with varied degrees of success. Improper atomizing and smoke nuisance have been drawbacks with most of these home-made devices. The Brooker burner overcomes these two difficulties.

Can Reach Very High Temperatures

In feeding, the oil passes over a needle valve where it is united with the steam and is broken up in a chamber. In this chamber it takes a cone shaped formation, is forced thru an aperture in the extreme end of the burner and is further



Building Kiln for Oil Burning. The Up-Draft Method Is Used. Arch Doors Are Shown, and Workmen Working on Top of a Completed Arch.

broken up as it is thrown into the kiln. This apparent double action gives a thoro atomizing. The dry steam insures the

A Section of Dryer Room Where 35,000 Brick Are Handled Daily. A Conveyor Carries the Brick into the Dryer on Pallets.



Section of Dryer Room With Brick-Making Section and Power House in the Rear.



A View of Reservoir Tank Showing Pipes Leading to Brick Pump House Where Fuel Oil Is Pumped to a Gravity or Pressure Tank in Peak of Building.



Section of Oil Burning Equipment Shown in Operation at Kiln. Steam Pipe and Fuel Oil Pipe Running Parallel, Separate Valves Leading up into Burner and Regulating Valve Shown on End of Burner.

maximum of oxygen mixture and thus obviates the smoke nuisance.

With this burner the flame can be regulated from a few inches up to eight or ten feet. A temperature of 3,500 to 3,800 degrees F. can be secured. Thus the 1,700 or 1,800 degrees temperature necessary for burning brick is easily obtainable. With the even distribution and pressure as afforded, a given degree of temperature can be held and assured for any period.

In comparison with natural gas as a fuel, it is interesting to note that the 400,000 capacity kiln of brick was burned in four days and four nights with the new oil burning system, as against eight days and eight nights burning which formerly was required when natural gas was the fuel used. Approximately 28 gallons of oil were required for burning a thousand brick under the above conditions. Under normal conditions it is claimed that about 25 to 30 gallons will be required to burn a thousand brick. However, with 28 gallons as a basis, and fuel oil at seven cents a gallon, this makes a total cost of \$1.96 for the fuel requirement for each thousand brick burned.

With natural gas, 7,000 cubic feet were found necessary to burn a thousand brick. Taking gas at 45 cents a thousand makes the cost of fuel for burning a thousand brick \$3.15.

Compared with oil burning, a saving of \$1.19 in favor of oil firing was effected.

Previously, natural gas had been found much cheaper than coal. Two cars of coal and one car of coke were found necessary to burn a kiln of 400,000 brick. With coal at current prices and using the above figures, a comparison with coal can be made.

Since installing the service, the Cornhill brothers are staunch supporters, and other Western Ontario brick and clay products exhibit considerable interest, in the performance of the new system. Natural gas, which has been mainly relied upon in the past for firing clay products, has been more or less of a bugbear to the industry during the past three years. The supply of gas has been on the decline, government restrictions have been issued, and as a result the industry has had to work under permits, and at that, many times with an inadequate supply. At the present time there is considerable interest on the part of Canadian manufacturers to study other forms of fuel.

Cornhill Plant Has Good Reputation

The Cornhill plant is reputed to be one of the best in the Dominion, having a capacity of 9,000,000 brick per year. Numerous labor-saving devices are in use on the plant and over

30 men are kept in constant employment. Once every 14 days a kiln of 400,000 brick is produced.

A distinction in connection with this plant is that it is owned and operated by four brothers—something unique in these days when the family tendency is to break up and enter several vocations rather than to remain together. The business was established over half a century ago by the late James Cornhill, father of the present owners. The plant is favorably located on the banks of the Thames River and on the Pere Marquette Railroad, which assures ready shipping facilities.

In earlier years tile manufacture was conducted, the late Mr. Cornhill being a pioneer in this line of clay manufacture. A few years ago the plant concentrated on brick production, and definitely withdrew from the manufacture of tile.

An unfailing clay deposit, 8 to 12 feet deep, runs back several acres from the plant. Since the early days of the plant when the deposit was obtained right at the back door, the working has been extended back till the clay is now brought in steel dump cars a half mile or more distant from the plant.

Make 35,000 Brick Daily

The present owners are Edward Cornhill, president; James Cornhill, vice-president; Fred Cornhill, secretary-treasurer, and Henry Cornhill, general manager. The plant has a capacity of 35,000 brick daily, and is equipped with an Arnold-Creager Triple S automatic brick making machine and a Cleveland rack pipe dryer as the most noteworthy features. In the loading of cars Mathew gravity conveyors are considered indispensable. Steam power is used, and the manufacture of stock brick for the Western Ontario trade is concentrated on.

Marketing is done thru dealers, tho tab is kept on the movement of every dealer's stock. If the firm finds that a dealer is holding up its brick or knocking them in an endeavor to gain a larger profit to turn them over, they step in and take orders direct from the contractors in the dealer's own field. Tab is kept on the contractors and new construction in the various fields thru the medium of building reports from a house making a specialty of such information.

With the new equipment for burning brick and the increased output it assures thru the saving of time in burning, the concern is contemplating placing a man on the road and thus strengthening its distribution.

To further facilitate brick production, a second fuel oil storage tank is to be added to the present equipment. The present tank has a capacity of 8,000 gallons, and the new one will hold 12,000 gallons, or altogether the two tanks will hold about three tank cars of oil. The Cornhill brothers are out to take every advantage offered by the new installation, and are adding the equipment necessary to guarantee such advantage and lower production costs.

REFRATORIES MANUFACTURE IN SOUTH AMERICA

The records of the governments of Chile and Argentine have disclosed interesting information about the manufacture of refractories in those countries.

In Argentine the deposits of refractory clays are found in the Punta de los Mogotes, near Mar del Plata, in Olavarria and in the Cerro San Augustin, near Balcarce, places situated in the Province of Buenos Aires. There also are deposits in the provinces of Salta and Tucuman, but they are as yet little known.

White kaolin, in mixture with quartz (formed from the kaolin) is found in large quantities in Mutquin, Quebrada

Sijan, and Quebrada de Amanso in the Province of Catamarca. This material formerly served for making refractory brick which were used in the furnaces for copper smelting in Pilcio and Muschaca. The problem is being studied in order to take

Statistics of the Manufacture of Refractory Brick in Chile							
	Factories—Nationality			Total	No. of Officials	No. of Empl'ys	Total No. of Brick Manufactured
	Chilean	Foreign	Joint Stock				
1915.....	4	3	0	7	9	182	4,310,616
1916.....	4	6	0	10	17	313	5,625,160
1917.....	6	4	2	12	16	332	4,997,266
1918.....	7	4	1	12	17	313	4,078,183
1919.....	7	5	2	14	21	398	9,927,793

advantage of this material for ceramics; the tests gave good results.

North of Chilecito (Province of Rioja), a refractory sandy material has been exploited in Paiman, and employed with success in the copper smelters of Famatina. In the Sierra

Statistics of the Manufacture of Refractory Brick in Chile						
	Value of Raw Material All Domestic	Value of Manufactured Output	Pay Roll		Capital Classification	
			Officials	Employees	Less than \$50,000	Between \$50,000 and \$100,000
1915.....	\$103,703	\$ 503,767	\$32,590	\$155,406	4	3
1916.....	172,590	861,082	59,420	263,743	5	5
1917.....	205,752	959,394	57,686	291,745	5	7
1918.....	312,570	1,213,403	58,515	339,610	6	6
1919.....	484,989	2,096,260	71,717	428,840	8	6

de Cordoba, they use the "toad" stone (a greenish talc in mass) in the lime furnaces, which does not give satisfactory results in all cases, but it has the advantage of being much cheaper than the imported refractory brick. There is no definite data regarding the extent of the deposits or industrial statistics.

The records of Chile are more complete, as shown by the

Statistics of Mined Material						
	Clay		Lime		Kaolin	
	Tons	Value	Tons	Value	Tons	Value
1916....	13,457	\$134,570	76,860	\$1,152,900	200	\$ 7,000
1917....	18,361	183,610	88,379	1,325,685	200	8,000
1918....	15,360	230,400	105,763	1,586,145	250	10,000
1919....	.....	.....	17,603	311,632	650	23,014

attached table. The values shown are all in terms of Chilean money. No data regarding the imports has been kept, however.

Most of the deposits are in the northern and central parts of the country, and while some are quite extensive, no study has been made of them so that the exact number is not known. There is moreover no other data of the mining of raw material other than that shown herewith.

The records for 1920 have not been compiled and published up to this time.

NEWEST ADVERTISING EFFORT OF A. F. B. A.

One of the most recent ideas of the service department of the American Face Brick Association is the issuing of a portfolio of plates showing architectural details in brick-work. The portfolio contains some 32 plates each with a different type of architectural effect secured in brick. There are pictures of residences from every part of the United States and the reproductions on the plates are very fine. This newest work of the service department is entirely in keeping with the splendid efforts of the American Face Brick Association service department.

Why Advertising Should Be Continued

Advertising, Like Brick, Is Lasting—Intense Competitive
Selling Methods Makes Cooperative Advertising Necessary

By Herbert M. Houston

Former President, Associated Advertising Clubs of the World

EVERY HOUSE is built in someone's mind before it is built on the ground. I recall that a rambling brick house that now stands on the north shore of Long Island was borne about for years by Mrs. Houston and myself before it finally became a thing of brick and mortar and tile, all blending into a harmony of color and unity as our home. And while we carried it about in our minds, adding a wing here and a gable there as we saw some house in the beautiful English countryside that interested us, it seemed almost as real as it does today. The truth is that the market for any product is in the human mind. There must be good will created for an article before you want it and you must want it before you buy it.

My coming here today to address you is an illustration of the long life of good will. There was a good will value in favor of advertising that I had been able to get into the minds of some of your membership, thru an address I delivered before the National Brick Manufacturers Association at Rochester 12 years ago. To my surprise and satisfaction, it was stated that the cooperative advertising campaign in behalf of brick, that was later undertaken, had received some of its impetus in the suggestions I presented at Rochester. Whether this is merely a generous compliment or a fact, I am sure that I at least, in the preparation of that address, convinced myself of the value of brick and that that conviction has remained an enduring good will.

Advertising Building Good Will

The campaign you have been carrying on in the magazines and class journals and thru your beautiful booklets, in full color, I am confident has been a success because it has been so skillfully directed and so wisely placed that it was bound to build up a great body of good will in behalf of brick. While I haven't the relative figures as to building materials, during the dull times, I am sure that brick has held its own. That immediate result from your campaign doubtless justifies it as a profitable undertaking, but the cumulative result is the one that returns both principal and interest on the investment; for advertising is like brick—it endures. Not only does it endure but it enlarges, while it endures. By that I mean that you are causing to be erected three brick houses in people's minds to every one that is actually constructed on the ground. That may sound like pure guesswork, but it isn't. When I accepted Dr. Mars' invitation to pay a return engagement to the Makers of Brick, I undertook to check up some of the things I said in Rochester 12 years ago. I must confess that that earlier address was more or less an act of faith—looking to the "evidence of things not seen," for general building advertising 12 years

ago, especially of an industry in a cooperative way, was in its beginnings.

Advertising Creates Potential Building

On investigation among building advertisers I have found that the average length of time that elapses from an inquiry to an actual building operation is three years. So it is doubtless correct to say that, approximately, you are building three houses in people's minds to every one that you are building on the ground. Therefore your advertising is always creating potential building, in a ratio of three to one, to actual building. But another cumulative factor is introduced every time a house is built, for it stands as a beacon of light encouraging others to build. Who could undertake to appraise the advertising value of all the brick houses that stand thruout the world, beautiful, enduring and yet, in solid strength "ageing toward youth"? Clearly this is all part of your good will.

It has seemed to me that the makers of brick have never begun to realize how favored they are among the sons of men. In nearly every other industry the temporary, often the ephemeral character of the product, is a hazard and at times a definite liability. The automobile maker may turn out a car that requires so much repair and replacement that he will seriously handicap future sales. The shoes we wear may be so short-lived as to gain ill will, rather than good will, for their maker. But there is no such debit entry in the ledger of the maker of brick. Paradoxical as it may sound, the only one that is likely to be injured by the durability of brick is the brick manufacturer himself.

Brick Essentially Same as 4,000 Years Ago

As I said 12 years ago in Rochester, speaking as a publisher: "Our printed page is a descendant, thru long evolution, of the papyrus of the Egyptian but your brick and the brick of the Egyptian are essentially the same." And then I added "it would be strange indeed if a material that had changed so little from early Bible times until now had not bred a sort of unconscious conservatism in its makers." But happily this conservatism, while it delayed unduly the beginning of your cooperative advertising, served to keep it going, once it had begun. Your campaign has been continuing, like the life of brick, and so it should be to the end of the chapter.

Consider for a moment the advantages of continuing and the disadvantages of quitting—altho I realize that the latter alternative isn't even being considered. There are four clear advantages in going ahead—the protection of the great body of good will for brick which your cooperative campaign has thus far created; the actual sales effected for houses soon to be built; the future sales for houses you are building in people's minds; the permanent value of every brick house as

Editor's Note—From a paper read before the Convention of the American Face Brick Association at White Sulphur Springs, Va., December 8.

an advertisement for brick. These advantages are cumulative in good will, always and everywhere, because the product you sell possesses great merit.

Would Be Serious Mistake to Stop Publicity

As to the disadvantages that would come from quitting, these might also be placed in four heads: the canceling of the protection for the good will investment you have made—(of course the investment would not all be lost but it would be seriously impaired in this age of aggressive competitive selling); the shrinkage in actual sales that come thru your advertising; the shrinkage in potential sales made in people's minds, which would be marked and sudden when the educa-

Advantages of Continuing Advertising Campaign

¶ 1. The protection of the great body of good will for brick which the cooperative campaign has thus far created.

¶ 2. The actual sales effected for houses soon to be built.

¶ 3. The future sales for houses you are building in people's minds.

¶ 4. The permanent value of every brick house as an advertisement for brick.

tional advertising that created them was stopped; the reduction in the permanent advertising value because of a reduced number of brick houses, thru this shrinkage in actual and potential sales.

But it seems to me that the most far-reaching loss from quitting would be in the general effect on the public mind. Wouldn't such action of an organized industry be looked upon as a vote of lack of confidence in its own product? This would be the inevitable impression, I am convinced, because an industry, speaking as a corporate unity has an authority that far surpasses an individual advertiser or of advertisers; so if its voice should become silent the public would be convinced that it was unable to hold its own against competitors.

Present Is Era of Cooperation

Of course the makers of a building material, with the great merits of brick, will never seriously consider retiring from the field and leaving it uncontested, before the aggressive selling campaigns of the lumber and the cement associations.

In this era of cooperation it is most natural that the members of any industry should be disposed to get together and work out common tasks in a common way. Clearly there is no common task, of more fundamental interest to any industry, than that of making, of stabilizing and of enlarging the market for its product. In performing that threefold service, advertising has come to have a large and sure place. The most hard-headed business men, who challenge every cost and make it render a full 100 per cent. in service, have come to be among the most convinced believers as to the power and value of advertising as a force in making markets and aiding in distribution.

The advertising of industries was an inevitable outcome from the organizing of industries into associations. These associations have undertaken to carry forward common undertakings and, in the forefront of these, has always stood—and always will continue to stand—the matter of markets.

Lumber Started Cooperative Advertising Idea

One of the first of the cooperative advertising campaigns was that of the lumber people. The Cypress Association has now completed 12 years of continuous advertising. I asked the Crosby Agency of Chicago, the able organization that has directed this campaign and a number of similar campaigns, what it thought were the chief purposes back of association advertising. And it is interesting to call your attention to their reply, which was this:

"There are three chief purposes—the first is to promote a better sort and degree of cooperation among the members of the industry advertised. The second is the development of such sales pressure as can be used upon the various distributors of such products, impelling them to greater activity on its behalf. The third is the stabilization of the broader markets for such products thru the development of public recognition of its service value."

You are probably quite as familiar with cooperative advertising of industries as I am; but it will be worth while for both of us to make a brief reference to some of the most important of these campaigns, and I am sure we will all be greatly impressed with their variety and range. For example, what could be farther removed from a building-material campaign than the one carried on by the Society of American Florists? The product sold by you brick manufacturers is everlasting, but the roses sold by the florists are, in the truest sense, ephemeral. And yet advertising has served you both, showing that it must have some essential principle of appeal of the widest application.

Florists' Campaign Very Effective

The success of the florists' organized campaign has been tremendous. Their slogan, "Say It with Flowers," has brought itself into the language as a common expression. I cannot imagine a more difficult campaign to make a success of than this florist campaign.

There are now literally scores of cooperative advertising campaigns. The very fact of numbers of continuity would seem to establish beyond any question the value of cooperative advertising. On the face of it, it would seem flying in the face of reason to hold that the thousands of people in all sorts of industries who undertake cooperative advertising would continue to do it if it were not proving to be profitable.

The example of the Citrus Fruit Growers of California is known everywhere. Here was the rather plebeian orange, a fruit without any particular character or reputation, that went forward under the alluring title of "Sunkist" and not only spread its markets by leaps and bounds, but has held and enlarged them year after year. The raisin growers have done the same thing and so have the olive growers. Even the fish swim to our tables on the stream of cooperative advertising.

Advertising Put Red Gum on Map

But I know you must be deeply interested, of course, and primarily interested in what building material advertisers have done along cooperative lines. So it may be worth while for me to talk about these in some greater detail. You will recall that when the Red Gum Manufacturers Association began its campaign a number of years ago, this wood was really unmarketable—largely because its quality was unknown. As the result of the advertising, Red Gum has come to be one of the most highly valued woods for interior trim that there is. But knowledge of its quali-

ties had to be borne into human minds before the red lustre of the beautiful wood could add a fine quality of distinction to hundreds of homes.

I recall distinctly, at the time this campaign was begun, having heard that one of the chief reasons for undertaking it was to build up, thru carrying it on, a spirit of team-play and cooperation among the Red Gum lumber people themselves. And I have learned that this particular result was achieved as a by-product, along with the principal objective which was, of course, making a larger market for Red Gum for interior woodwork.

Pioneers Started in South

About the time the Red Gum campaign got under way, the Southern Cypress Manufacturers Association started their advertising. As I have already stated, this has been one of the most successful of all cooperative campaigns. But these two pioneer enterprises, starting, oddly enough, in the South—which had been supposed to be somewhat backward in an appreciation of advertising—have had the honor paid them of being followed by many similar campaigns. Just to mention the list makes an impressive roll-call. They are:

The White Pine Bureau; North Carolina Pine Association; Great Southern Lumber Co.; Southern Pine Association; Arkansas Soft Pine Bureau; American Oak Manufacturers' Association; California Redwood Association; Oak Flooring Manufacturers Association.

The great activity of the lumber people presently stirred the cement manufacturers to undertake a campaign. For a number of years this advertising has gone forward, under an increasing appropriation each year. It has covered the use of cement for all kinds of building purposes—houses, business buildings, factories, roads and bridges—with the result that the market for cement has had an unparalleled expansion. Along collateral building advertising lines have been the campaigns of the Paint Manufacturers Association, the Metal Lath Manufacturers Association and the Wall Paper Manufacturers Association.

Cement Men Back Association Strongly

Upon inquiry, I have learned that the Cement Association includes, as backers of its cooperative campaign, a list of active contributors representing 85 per cent. of all the cement manufacturers in the country. The Wall Paper Association includes 90 per cent. of the manufacturers and about 75 per cent. of the jobbers as supporters of its campaign, while the lumber associations, I am informed, include practically 100 per cent. of the manufacturers of their particular branches of the industry.

This association advertising, therefore, becomes impressive and powerful because of its representative character. It has a sense of solidarity and of corporate unanimity which combine to make a powerful appeal. When one reads an announcement in which a great number of competitors join in informing the public in regard to the qualities of the product they make, there is a feeling that the appeal represents the combined judgment and authority of an entire industry—and that is precisely what it does represent and that is one of the manifest reasons why cooperative advertising campaigns have had such a far-reaching effect in building up good will.

Much Good Will Built Up for Brick

As to the immediate and collateral results from your own campaign, I cannot speak from first-hand knowledge. My

friend, Dr. Mars, I am sure has convincing figures and reports and records that establish a complete case on that point. But I do know the effect that your campaign has had on me, reference to which I made in the beginning of this address; I also know of the favorable impression in regard to brick that it has spread thruout the country. And I think as one quite detached, I may be in a better position than even you are in, to venture an opinion as to the cumulative value that will come from continuing your campaign.

I have just been describing briefly the many cooperative campaigns that are being carried forward by whole industries. In going forward yourselves you have the support of this great body of experience of associations similar to your own. You can thus touch elbows with a large company of alert and successful organizations marching in the same direction. Clearly, so many of them would not be marching in that direction if, to use the vernacular, they had not found "the going good."

Urges Continuance of Good Work

I presume there would not be a protracted period of mourning among the lumber associations and the cement associations if the brick advertising campaign should cease. But one doesn't have to be a prophet nor the son of a prophet to foresee the time when there would be weeping and gnashing of teeth among manufacturers of brick. But I am fully conscious of the fact that you are not inclined to add either to the satisfaction of your competitors or to grief for yourselves. And manifestly the way to do that is to go steadily and surely forward.

Meeting here today in the Virginias, I am reminded of that great Virginian who did so much to build up a good

Disadvantages That Would Result From Quitting an Advertisement Campaign

¶ 1. The cancelling of the protection for the good will investment you have made.

¶ 2. Shrinkage in actual sales which come thru your advertising.

¶ 3. Shrinkage in potential sales made in people's minds, which would be marked and sudden when the educational campaign that created them was stopped.

¶ 4. The reduction in the permanent advertising value because of a reduced number of brick houses, thru this shrinkage in actual and potential sales.

will value for that fair country beyond the Blue Ridge. You will recall how he went out with his transit instrument and chainmen, and spent three strenuous years charting and surveying the holdings of Lord Fairfax that lay to the other side of the Monongahela.

That was the real beginning of the West. The trapper, the hunter, the French explorer out of the North, had come and gone and left not so much as the ashes of a campfire. But the young Virginia surveyor read the stars to get the triangulation for his instrument and he laid true the lines of ownership and settlement and civilization; the wilderness surveyed is a wilderness no longer, for then it lies in the sure reach of man's conquest.

How Wildernesses Were Peopled

Here was the "father of his country," as a youth, making a survey and keeping a complete journal of his observations

about streams and forests and soils to bear back to the owners of the territory, Lord Fairfax and his brother Sir William, a journal that is one of the earliest advertising booklets ever written in America. For that is precisely what it was. And following the information it spread in Virginia, in a limited way to be sure, there went across the mountains, now and again, a hardy pioneer to begin a new home. Letters found their slow way back to the old homes, often borne by some settler returning to the East for his family. In time the little stream of immigration, which at first was like a tiny spring trickling down the Alleghenies and Blue Ridge, became a broad current of men and women and children—the makers of the West.

What took them out past Fort Monongahela, down the Ohio, out over the Western Reserve and on to the broad prairies of the Wabash and the Sangamon?

Personal Advertising Most Effective

It was the most effective form of advertising that has been found from Caxton's time until now—it was personal advertising; the personal report of Washington to the Fairfaxes, and similar reports from scores of other surveyors to other proprietors, the letters home to the Merrimac and the Kennebec, to the James and to the Catawba, the word of mouth advertising of returning Calebs who had spied out the promised land and who, true builders and prophets that they were, knew it to be the promised land, despite forests to clear, Indians to fight and the wilderness to conquer.

In this modern day, gentlemen, the same principle of good will underlying and explaining the upbuilding of the great West—indeed of every part of the country—is the principle that is behind all progress, whether in upbuilding a state or a business. But the modern world has given us marvellous agencies for applying the principle. The telegraph, telephone, fast trains, rural free delivery give facilities for the distribution of intelligence by letter, by newspaper, by magazine that are simply bewildering. Advertising is the application of that principle to business. As markets are always essential to an industry, for the fundamental reason that distribution and production must maintain a healthy balance, this principle of advertising as a builder of good will is one that must be applied continuously. It is an essential part of business, because markets are an essential part of business.

Good Will Handed Down Thru Generations

In tide-water Virginia, along the James and the Potomac, there are many fine old brick houses. The brick that built some of them was shipped from England, showing in what esteem our forefathers held the material that made the ivy-covered walls of their ancestral homes. Here is good will handed down from generation to generation as a tradition. Surely such good will is worth increasing, for it becomes as everlasting as the brick to which it clings. Happily for the brick manufacturers of today the means for increasing that good will have been multiplied a hundredfold, thru the persuasive power of truth borne on printed pages into minds where markets are made.



NEBRASKA MEN TO MEET AT LINCOLN

January 11 and 12 are the dates set for the annual convention of the Nebraska Brick & Tile Association. The meeting will be held at the Lincoln Hotel, Lincoln, Nebr., and an interesting program has been arranged. On Wednesday afternoon, January 11, A. V. Bleininger will speak to

the delegates. The entire afternoon will be given to Mr. Bleininger, and he is well qualified to give a great deal of valuable information concerning the brick and tile industry. A banquet has been arranged for in the evening, when the members will have an opportunity to view a very interesting, entertaining and instructive film on the making of brick and tile.

On the afternoon of the 12th, M. Weil, president of the National Bank of Commerce, will give his audience some first-hand information regarding conditions in the State of Nebraska.

The secretary, O. H. Zumwinkel, will be very glad to receive any suggestions from any of the members regarding this convention.



REFRACTORIES MEN MEET IN PITTSBURGH

The conclusion that manufacturers of fire brick need not look for any business encouragement before April or May of next year was reached after a discussion of the fundamental economics of business at the opening of the convention of the Refractories Manufacturers' Association of America in Pittsburgh, Pa., December 6. The refractories men met in the Fort Pitt Hotel.

Haskell B. Whaling, professor of economics in the University of Cincinnati, and Ernest F. Dubrul, of the National Machine Tool Builders' Association, spoke at the opening session of the former body. John D. Ramsay, of St. Marys, Pa., presided. Dr. E. R. Weidlein, of the Mellon Institute of Industrial Research, spoke at the afternoon session. He outlined the program which has been laid out for research work in refractories and which will last for three years. "Fuel Conservation" was discussed by S. M. Kier, of Pittsburgh, and a report of the Bureau of Foreign and Domestic Commerce on "Opportunity for Exporting Fire Brick, Particularly to India and China," on which a survey was made for the association, was read. At the closing session the delegates were taken on a tour of recent paving and other engineering projects in Pittsburgh.



STOVE LINING MANUFACTURERS MEET

The National Stove Lining Manufacturers' Association held its annual meeting at the Hotel McAlpin, New York, Wednesday, December 14, with morning and afternoon sessions. Matters of general business were discussed and the noon hour given over to a delightful luncheon. A representative gathering was present from different parts of the country.



IOWA CLAY MEN TO MEET IN DES MOINES

Remembering the fine meeting and good time enjoyed by all the delegates to last year's convention of the Iowa Clay Products Association, this year's meeting will undoubtedly draw a crowd. The Iowa men will meet on February 15 and 16 at Des Moines. The meeting will be carried out in about the same manner as last year's affair.

On February 14 and 15 the Central Iowa Lumbermen's Association, the Northeastern Iowa Lumbermen's Association, and the Iowa Builders Supply Association will hold conventions and the Iowa Clay Products Association will unite with these organizations and give a ball at the Auditorium on the evening of the 14th. The clay products men will probably have a banquet to which all the delegates are requested to bring their wives and lady friends.

It is expected that there will be a fine turn-out to the convention, and a very successful meeting is looked forward to.

Mining Operations at Flint Brick Co.

Hydraulic Gun Proves Economical Method of Stripping—660 Foot Belt, Conveying Shale from Pit to Plant Does Away with Labor of Four Men

CUT DOWN your production costs! That is the cry in the clay products manufacturing industry at this time. Tho we have heard the word until the very sound jars on us, yet efficiency and more efficiency is necessary for the clay industry to continue to compete with associated products. The cheapest methods in production are invariably those where machines are used in place of manpower. Some day the ideal plant will be built having for its slogan the same words the modern bakery uses: "No human hand touches this clay from the time it is mined until the brick are laid in the wall."

However, we do not wish to convey the impression that modern methods are not used in the manufacture of brick or tile. On the contrary, thruout the country there are many fine examples of up-to-date manufacturing ideas applied in clay products manufacturing. A fine example of a well equipped plant is the Flint Brick Co., manufacturer of paving brick at Des Moines, Ia. W. H. Brecht, general manager, is a thoro believer in modern methods.

Use Hydraulic Gun for Stripping

As at many other plants the Flint Brick Co. has an overburden to get rid of before the winning operation can be begun. This overburden consists mostly of sandy loam and clay and varies in depth, sometimes reaching a depth of 15 feet. Stripping with the least possible expense is always a problem and there are many efficient methods in use which dispose of the waste material satisfactorily. The Flint Brick Co. uses a method which is found to be entirely satisfactory and very economical. The system employed is a hydraulic gun.

The plant is located alongside a river and all stripping is done in spring when the water is highest. Enough of the overburden is stripped in the early weeks of spring to insure operation thruout the season. The water is pumped from the river, a distance of approximately 1,000 feet, and shot thru a nozzle

1½ inches in diameter. 250 pounds of pressure is developed at the nozzle and this powerful stream of water cuts the overburden very easily and washes away the waste material. Tho the pressure at the nozzle of the hose is tremendous, the stream is very easily handled by one man with the ingenious device shown in the accompanying picture. This one man does all the stripping the plant requires.

Making Good Pavers From Hard Shale

Wherever it has been possible to use machinery in place of human power the latter has been discarded. The company makes a very fine grade of paving brick from a very hard shale. Always a difficult problem to overcome, is the mining operation. Not a very long time ago the Flint Brick Co. won its clay with a 70 ton steam shovel. The shale was conveyed from the shovel to the plant by two gasoline locomotives. Now, however, a different type of machinery is in use in the pit and the shovel and locomotives have subsequently been discarded.

A machine known as a shale planer now wins all the shale the company requires. A brief description of the workings of this machine may be of interest to those who are not familiar with its operation. The planer consists essentially of a steel framework, 45 feet high which supports the cutting chain. This chain runs at an angle of about 68 degrees and upon it are mounted short cutting knives and buckets. The whole machine is moved against the shale bank on tracks and cuts from the face of the bank in the shape of an arc. The machine automatically moves forward at the rate of about one inch for every turn. Cutting as it moves back and forth the planer produces a diagonal cut on the face of the shale bank.

In hard shale a cut so thin as one inch will naturally produce very small pieces and thus make the raw material considerably easier to handle in the crusher. The planer can easily handle the 300 tons of shale, which is approximately what the Flint



A Good, General View of a Shale Planer, the Type of Machine Used to Win Shale at the Flint Brick Co. Plant at Des Moines, Iowa.



The Method of Operating the Hydraulic Gun. Only One Man's Required to Handle the Stream which Develops 250 Pounds Pressure.

Brick Co. requires daily. The full capacity of the machine is not known as it has never been taxed to its utmost.

A remarkable system of belt conveyors is in use at this plant. The shale travels a scant 150 feet from the planer to a hopper which feeds the first conveyor belt. This initial 150 feet is negotiated by cars drawn up by an electric hoist to the hopper approximately ten feet from the ground. The belt which takes the shale from the hopper is 18 inches wide and carries the shale for a distance of 660 feet into the plant proper.

This belt is supported upon wooden trestle work with rollers, which give it a trough-like shape, placed about every five or six feet to insure easy riding for the conveyor. It enters the plant at a height of probably 25 to 30 feet from the ground. The belt is not entirely unprotected from the weather but a wooden housing, or roof, has been built over it and covers it for the entire length. A runway has been built on both sides of the conveyor belt providing easy access to any part of it at any time, in case something should go amiss. The runways also make a handy and dry walk into the pit.

Another belt approximately 200 feet long takes the shale from the first one and deposits it in the hopper which feeds the dry pans. This second belt runs inside the building at right angles to the first and directly beneath it is the clay storage.

Big Belt Handles Storage Clay

This storage is sufficiently large to carry clay for 2,000,000 paving brick. A belt similar to the first two mentioned handles

chinery in the plant, clay can be dumped into the storage. Thus the planer can be operated much more steadily than otherwise would be the case. The length of the storage bin is about 200 feet and a tripper runs along the top belt making it possible to distribute the shale evenly over the entire floor.

The Flint Brick Co. has a capacity of about 60,000 paving brick daily and the big conveyor belt will easily handle enough



A Part of the 660 Foot Conveyor Installation at the Flint Brick Co. This Equipment Supplanted Four Men.



The Shale Planer of the Rockford (Ia.) Brick & Tile Co. The Same Kind of Machine is in Operation at the Flint Brick Co.

all clay in the storage. It is below the ground level, the carriers side coming up to within a few inches of the floor line. Loose boards are laid over the belt and the shale is stored in the bin on top of these boards. As the shale is needed the boards are taken up and the belt carries it to the crushers.

The immense storage bin enables the large belt to operate practically continuously as, if anything goes amiss with the ma-

raw material to supply all the needs of the brick machine without making the belt work to its capacity.

This big belt conveyor and shale planing system reduces the cost of winning the shale considerably. The steam shovel which the company formerly used is now standing idle and will probably be disposed of. Two gas locomotives have been supplanted and a goodly amount of track has been made available for other purposes. Probably the greatest saving is effected on the payroll. The labor of four men will be eliminated by the use of this equipment and this item alone will effect a large saving.

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PROPOSED DUTY ON BARIUM CARBONATE

Many brick manufacturers are interested in the tariff bill recently passed by the House, which contains a provision for an import duty of one cent a pound on precipitated barium carbonate. The bill is now before the Senate, and if there is anything to be done it must be done quickly, advises a bulletin recently issued by the American Face Brick Association.

Barium carbonate is now around \$40 per ton, and is sagging in price. The pre-war price ranged between \$25 and \$30 per ton. The tariff of one cent per pound would amount to \$20 per ton, which would give the extraordinary figure of about 100 per cent. duty based on pre-war levels.

The quantity of barium used in the brick plant varies from 5 to 15 pounds per thousand brick. Consequently the proposed rate would add from 4½ to 12¾ cents per thousand to the cost of these brick.

The clay products industry is making every effort to reduce the cost of manufacture of its material, and altho the increased price per thousand brick which will occur by the enactment of such a tariff is not exceedingly large of itself, it is certainly an item which should not go by unchallenged. Telegrams should be sent to Chairman Senator Boise Penrose of the Senate Finance Committee, and these telegrams should be followed by strong letters of confirmation, in which it should be argued that a tariff of 100 per cent. is too high.

Setting a Wood Fired Scove Kiln

Correct Setting of Primary Importance in Scove
Kiln—Care in Construction of Benches and Arches
Necessary—Various Methods of Setting in Use

By Elias Petts

IN THIS DAY of down-draft, continuous and tunnel kilns, it may seem somewhat out of place to venture an article on the oldest method known to the trade for setting and burning their ware. But, even as we are so used to electric lights to illuminate our homes that few housewives would know how to properly trim the old-time coal oil lamp, so many of us are used to every kind of kiln except the up-draft kiln, and if called upon to set and burn a kiln of this type, we would be at a loss to know just how to go about it.

You will note that we say "setting and burning", because no burner, no matter how skillful he may be, can successfully burn a kiln of brick that has been badly or improperly set. Your method of setting may be the very best for your conditions, but if this method is not properly adhered to by your setters, the results would be bad; so the first thing to do is to be sure you adopt the best method of setting for your particular conditions, and then see that this method is followed religiously by your setters.

Setting Wood Burned Scove Kiln

How may one determine the best method of setting his kiln?

In setting a kiln of brick, there are several things to bear in mind, some of which we will try to explain.

First, we will take up the common wood-fired scove kiln.

We are aware that this type is not often used, but for the benefit of those who may desire to, or, as sometimes happens, are forced to use this type, for the time being, and as this article would not be complete without taking this up, we shall try to be as plain as we can so that any brickmaker may understand each step.

The first thing to consider in setting a scove kiln is a kiln seat that is elevated sufficiently above the rest of the plant to be sure that no water can reach same, regardless of how hard or how long it may rain. If it is necessary to fill to get kiln bottom above high water, fill a larger place than the dimensions of the kiln, and be sure all is

packed and rammed well before setting on same. The reason for making the kiln seat larger than you set the kiln, is to prevent scoving from slipping out at the bottom when burning, as would be the case if it was built up on the edge of your filling; and furthermore, the filling would have a tendency to work from under the scoving on account of the men working around the kiln during the burning, which would mean serious trouble, as not only the scoving but the kiln of brick might fall out. These points should be carefully followed if you wish to avoid trouble during the burning of the kiln.

Set Floor With Burned Brick

You are now ready to start your setting. Have bottom perfectly level, and if you have burned brick on the plant (which, of course, you would have, unless your plant is a new one), lay a course of burned brick flat under the setting. There are two things you must not lose sight of in setting your arches—first, they must be set so as to sustain the weight of the kiln; and, second, they must be set so as to allow the fire to work out of the arch and up into the kiln as rapidly as possible. In order to accomplish the above, we have found it best to get as many tight courses in the setting of the arches as we could without retarding the draft or the passage of the heat from the arches to the body of the kiln. For this reason, we recommend the setting of what is known as four-brick benches with a 16 inch, or two-brick, arch opening. We are aware that some only set a three-brick bench, and some even a two-brick bench, but we do not approve of this for several reasons.

Two-Brick Bench Insufficient

For example, we will take the two-brick bench, as this is the extreme. When your kiln is set, as you have a 16 inch opening between every two-brick bench, it is readily seen you have only 50 per cent. of bearing on your kiln bottom to carry the weight of your kiln, while the four-

This is the first of a series of articles by Elias Petts on setting and burning in up-draft kilns, which will appear from time to time in Brick and Clay Record.

Mr. Petts is well known in the clay industry and is recognized generally as an authority on any matter pertaining to up-draft kilns. In approximately 40 years of experience in the clay products industry he has had ample opportunity to become thoroly familiar with the problems of burning in up-draft kilns.

Mr. Petts first made his acquaintance with clay and its uses in March, 1880, at the old French Post Town of Vincennes, Ind., where under the late R. B. Morrison, he learned to do everything from turning up brick to setting and burning. Later when Mr. Morrison perfected the Morrison Patent Up-Draft Kiln, he travelled practically all over the United States, erecting and burning for the Morrison Kiln Co.

After a number of years in this work, Mr. Petts went to Shreveport, La., and took charge of the Lewis Oliff plant, in which capacity he remained for nine years. From there he went to Trimble, Ga., where he rebuilt the Trimble Plant. He succeeded in putting that concern on its feet and then spent about one year with the Griffin Press Brick Co. putting the plant on a paying basis. He then became superintendent of the Chattahoochee Brick Co., at Atlanta, Ga., which position he resigned nine years ago to take up the duties of superintendent of four plants of the Baltimore (Md.) Brick Co.

brick bench would give you 66 per cent. Again, with the smaller bench, should your clay not stand this method of firing well, as is sometimes the case, and the ends should chip and crack off on the sides of the arches, you will see at

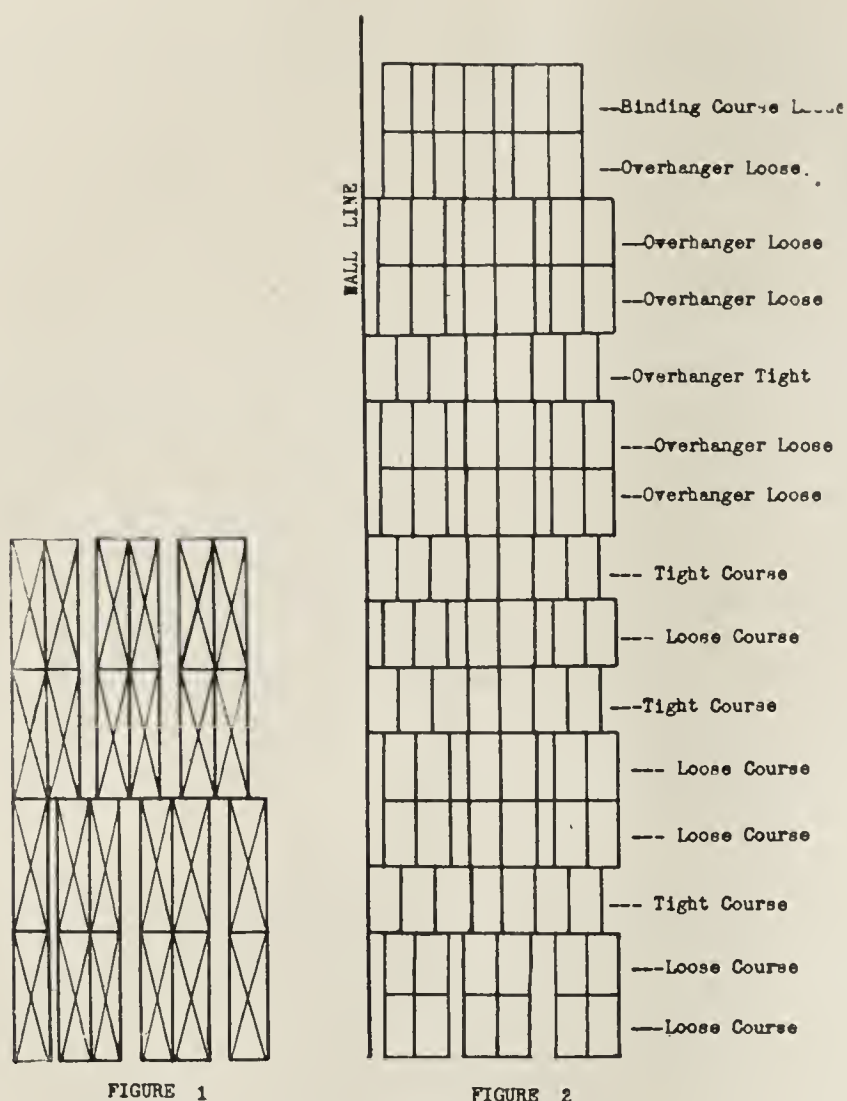


Figure 1 Shows Ground Plan of Arch in Scove Kiln. Figure 2 Shows Method of Setting Brick.

once that with the two-brick bench, your bearing could easily be reduced to 33 per cent., or even less.

There is another thing in favor of the four-brick bench—if your brick do chip, they are only the ones next to the fire, and you have two good brick in the middle of the bench, making more than 50 per cent. of your arch brick good, while, with the two-brick bench, you would have hardly any, if your brick should crack or chip as stated above. Also, with a four-brick bench, you have less arches in a given length of kiln; in other words, you would have 33⅓ per cent. more arches with the two-brick bench than with the four-brick bench, which would further reduce the percentage of damaged brick, in favor of the four-brick bench.

How to Set Four-Brick Benches

How shall we set these benches to get the best draft and have them solid enough to support the kiln? We will set the first two courses on the flat burned brick referred to above, in pairs one inch apart. (See Fig. 1, which is ground plan of arch. Also note in Fig. 1, that we start on one side with a single brick, and on the other side, with pairs. This makes a baffle or cut-off for the fire in the middle of the bench, and prevents the fire from stealing from one arch to the other). Set the second course directly and squarely on top of the first. Now run a tight course on top of this entirely across the kiln. Next, set two more courses, in the same manner as the first two; then, another tight course. Now set one loose course on top of this second tight course, and then another tight course. This makes eight in all; the first, second, fourth, fifth, and seventh courses, loose; and the third, sixth and eighth, tight.

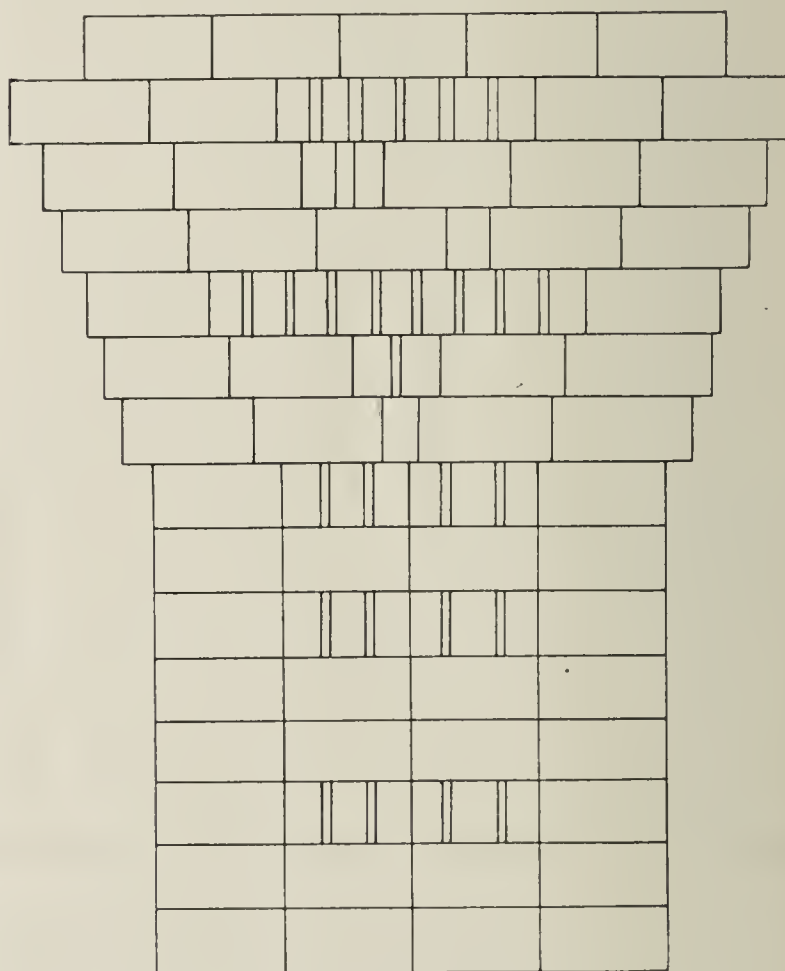
These are your brick next to the fire and up to the overhangers. Now set one of your middle brick up against this to the same height, namely, eight courses; set first, second, fourth, fifth and seventh courses in same manner as in fire bench; and squarely behind same so that openings match; this allows fire to pass in thru loose courses and up thru stretchers (which are the third, sixth and eighth courses in the middle bench).

Setting the Overhanger

You are now ready for your overhanger, which you set in the same manner as above; the first two courses loose and directly over each other. (Do not break these joints). Set third overhanger tight; fourth and fifth, loose, also the sixth, which is the last; the only difference being the sixth breaks the joint of the fifth; then the binding course sets directly over the last overhanger.

In following over these overhangers with the middle bench, set in pairs directly behind pairs in overhangers, and stretchers behind third and sixth overhangers, except one header behind sixth overhanger, as shown in sketch. Do this on each side of arch. Of course, you will have to fill in the center between overhangers, as shown in sketch. You now have your arch up, and are ready to start your regular setting on top.

In setting a scove kiln, the setting should have a slight batter or lean inward from the bottom to the top, and this should be regular all around the kiln, sides and ends.

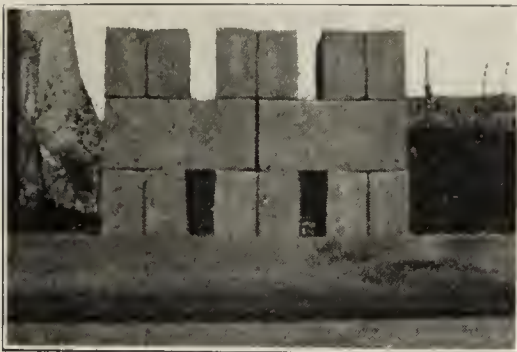
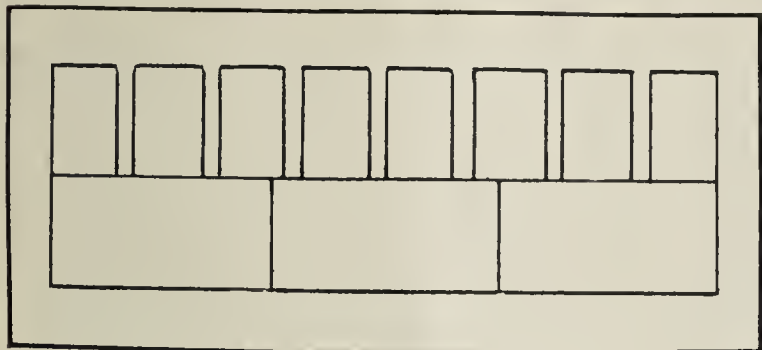
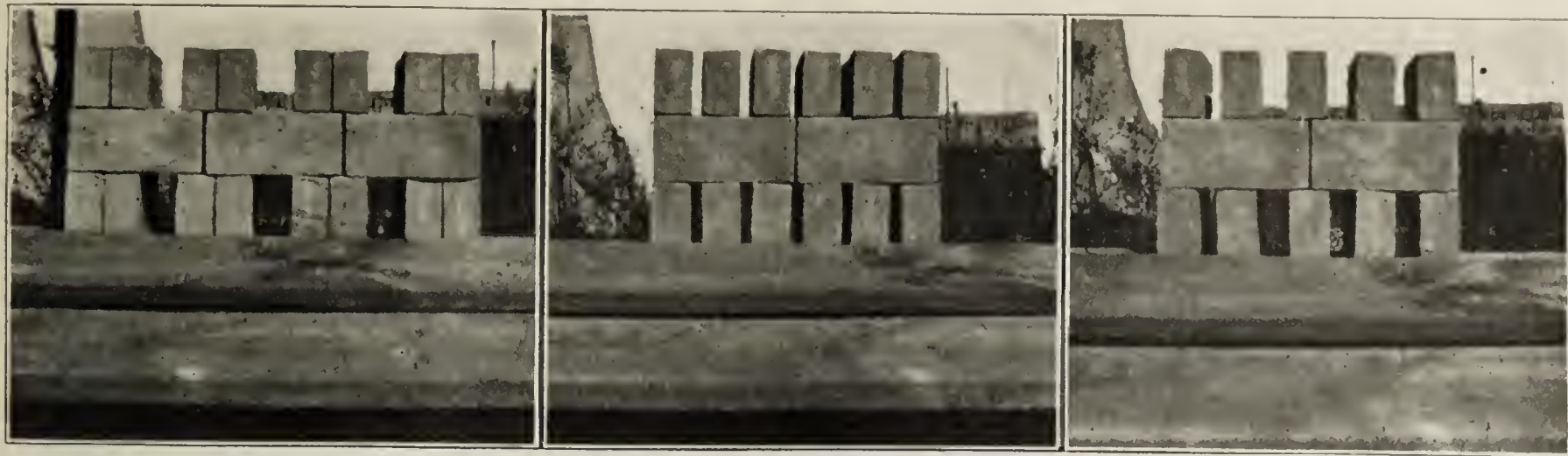


Method of Setting Brick for Arches in Scove Kiln.

Care should be taken not to make this batter too great, or it may defeat its purpose by causing the kiln to "kick out" at the bottom when hot; about six inches from bottom to top is sufficient.

The sides and ends should be well tied in, but care should be taken to have the sides and ends set open enough to give a little more fire space than the rest of the kiln.

The manner of setting above the arch must be determined by the size of your brick. Wood does not require as much space between the brick as coal, the draft with the



Various Methods of Setting Brick Over the Arch. Starting Upper Left They Are 8 on Edge on 3 in Length; 3 on 3, or 3 on 2; 5 on Edge on 2 in Length; 8 on Edge on 3 in Length; 6 on 2 in Pairs.

former being very much stronger. The usual manner is to set what is known as "three on three," or "three on one," in length; if this makes them too tight, they can be set eight on edge on three length, or if the brick are very thick, five on edge on two in length. Another good plan is to set on edge on two in length in pairs; this makes a larger opening than where each brick is singled out, but makes a smaller number of openings.

Setting Must Be Uniform

With the exception of two brick, or 18 inches on ends and sides, the kiln should be set with a uniform amount of space, if you expect it to burn uniformly. If this is not done, the burner will have trouble with the fire following the loose setting and avoiding the tight setting; hence, the necessity of uniform setting.

You should have two courses of platting, the first running across the last course of brick and laid one inch apart; this course is sometimes called the regulating. Next, put on your top course of platting across the first, and of good square brick laid tight.

Just a word as to the height and width of your kiln. If you are not accustomed to this method of burning, I would not advise over 25 or 26 feet in width, as you may have trouble getting wood to the center, especially if your wood is rough and your men are not accustomed to it. However, with good, straight pine wood, the writer has burned 30 to 32 feet wide.

On a new kiln seat, I would not set over 36 or 38 brick high. After the ground has been burned over once or more times, the height could be increased by several courses.

Make Scoving Nine Inches Thick

Now, make your scoving nine inches thick at the bottom, with a footing under this of four inches on the outside; this gives you a twelve inch bearing on the bottom. Run your nine inch scoving half-way up, following the batter of your setting, but keeping it one inch away from setting and at the same time letting an occasional brick project against the setting to maintain this one inch space and also to steady the scoving wall. The reason for this is to

give your fire a one inch flue up the outside to make it burn harder.

Leave Peep Hole Over Each Arch

Put a header on top of your nine inch scove wall, and on this start your four inch scoving, which you carry to top of kiln. This may be laid directly against the setting.

Your fire openings in front of each arch should be about 14 inches wide, and 14 to 16 inches high, and arched over with two inch rings of brick.

A peep hole should be left in the scoving over each arch.

Now see that your scoving is daubed tight all over, and you are ready to start your fires.

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WILL EXHIBIT TWO BRICK HOMES AT SHOW

Of especial interest to the brick industry membership is the plan of two exhibitors to build two separate brick houses complete, at the American Building Exposition at Cleveland, each of which will cost \$15,000 exclusive of the exhibition space. Real estate interests will have several exhibits, each costing upward of \$1,000 each. There will not be a thing connected with the business of building, whether relating to housing, commercial or industrial structures, that will not be exhibited at this show, so that there will be nothing that the prospective builder, or present owner seeking improvement to his present buildings, cannot find.

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INDUSTRIAL OPPORTUNITIES IN NEW JERSEY

A most interesting and attractive booklet has recently been published by the Board of Conservation and Development of New Jersey and is entitled, "Industrial Opportunities in New Jersey." The purpose of the booklet is to exhibit the advantages of New Jersey, outside of the recognized industrial and suburban centers, to those who are interested in locations that combine factory and home-making opportunities.

This booklet shows clearly that the clay industry in New Jersey, represented chiefly by potteries and terra cotta companies, is a very important unit of that state's industrial system.

Jersey Listens to Technical Talks

Interesting Ceramic Papers on Glazes and Porcelain Ware
Presented at Rutgers College, Before New Jersey Clay Men

THE ANNUAL MEETING of the New Jersey Clay Workers' Association and Eastern Section of the American Ceramic Society was held in the Fine Arts Room, Queens Building, Rutgers College, New Brunswick, on Friday, December 16, and it was run off with the "pep" and snap that has become characteristic of the gatherings of this well-known organization.

The gathering was, in reality, the first regular annual meeting of the association since 1919, the 1920 meeting having been omitted owing to unforeseen interruptions. The 1921 event, however, more than compensated for the extended intermission, and it proved to be one of the most instructive and interesting conventions of the organization. Both morning and afternoon sessions were held.

The meeting was called to order shortly after ten o'clock, with President Abel Hansen in the chair. He spoke a few words of greeting to those assembled and followed with an address replete with pertinent and terse references to the ceramic industry in the state.

New Ceramic School Nearing Completion

Speaking of the new ceramic school and research station, construction of which is now well under way, he said that the completion of the building would mark one of the greatest milestones in the history of the industry in the state.

"The state of New Jersey has many reasons to be proud," he remarked, "and the fact that it stands third in the manufacture of ceramic products is one of its principal assets. This should be most gratifying to us as an organization and should inspire a desire to manufacture products not only in great quantity, but in unexcelled quality.

"What we need at this critical period of our national existence is men of broad vision—men who are not satisfied with being what might be termed 'expert copyists,' but men who can originate and create. We have lived thru a period of destruction, and it has brought us a period of depression and business stress. Let us now bend every effort to constructive enterprise which will lead to prosperity and success."

Secretary's Report and Other Business

Secretary George H. Brown tendered an interesting report, covering the minutes of the last annual meeting and respecting the finances of the organization.

Mr. Brown also tendered a comprehensive digest regarding the progress made in connection with the new ceramic school. He spoke of the donations that had been made and the funds collected by different committees. The structure is now ready for the roof and cornice and is expected to be finished in May. It will be dedicated at a special gathering shortly thereafter.

R. H. Minton, chairman of the recent committee appointed to draft new by-laws for the organization, to conform with those of the American Ceramic Society, presented the proposed set of rules, and which were adopted by a unanimous vote.

G. H. Brown Presents Paper

The first paper presented was by George H. Brown, director, Department of Ceramics, Rutgers College, New Bruns-

wick, and C. C. Clarke, also of the department, covering, "Notes on the Effect of Composition on the Mechanical Strength of Porcelain Bodies," giving some interesting findings on this subject.

A series of ten porcelain bodies was used to determine the transverse strength of the material. The bodies were fired in commercial kilns up to cones seven and eight. The compositions were varied with a view to ascertaining the effect of the relative contents of flint and feldspar on the mechanical abilities of the bodies.

The results of the investigation appeared to confirm the theory that a high flint content is conducive to high mechanical strength, but it does not follow that such high flint content is desirable for all types of porcelain bodies, and particularly those which are subjected to wide temperature changes in use.

Strength of Porcelain Bodies

In this type of body, the increase in the mechanical strength so secured may be more than offset by the tendency of the high and irregular coefficient of expansion of the flint, causing cracking and heating in cooling.

The high strength developed by the high feldspar body is seemingly worthy of further investigation. This is true, particularly, with regard to low-fire bodies such as are used in the manufacture of table ware, and the high feldspar bodies employed in the production of vitreous floor tile.

In the high flint end of the series there did not appear to be a direct relation between porosity and mechanical strength. It would follow, therefore, that a porcelain body does not necessarily attain its mechanical strength when it has developed minimum porosity.

Speaks on Electrical Porcelain

T. A. Klinefelter, Atlantic Terra Cotta Co., Tottenville, S. I., followed Professor Brown, with an intimate and illuminating talk, entitled, "Some Notes on Materials and Processes in Electrical Porcelain Manufacture."

He covered in a brief and interesting way practically every phase of electrical porcelain production, commencing with the raw material to the point of testing electrical insulators for high voltage. Both high and low tension material was mentioned, with particular reference to the former.

He said that for voltages up to 70,000 and 75,000 volts, and above, one-fourth inch material, as a rule, was used, while for 40,000 volts and under, the thickness averaged one-eighth inch. For very high voltage work, one-half inch material was employed.

The material high tension electrical porcelain must be of better grade than that used for low voltage work, and likewise, greater care and attention are necessitated in manufacture. Firing is done up to cone 11 and 12 for bodies to be used for high voltage service, and to cones eight and nine for low tension electrical porcelain. Updraft, round type kilns are used at the plant represented by the speaker.

Explains Electrical Porcelain Characteristics

Body compositions were explained and the necessary characteristics for electrical porcelain for both classes of service.



"Among Those Present" at the Convention of the New Jersey Clay Workers' Association, at New Brunswick, N. J.

Closely in line with the comments in the preceding paper, it was pointed out that a high flint body gives the better strength. High tension porcelain must be formed of a dense and non-absorbent body, but not so dense as to become unduly brittle or of glass-like nature. The usual mixtures run from 40 to 60 per cent. of clay, 20 to 25 per cent. of feldspar, and from 20 to 15 per cent. of flint.

The speaker urged the establishment of definite specifications of logical and reasonable character for the purchase of clay and other materials. Such, he said, would help both the buyer and the dealer, serving as an accurate guide in the selection and distribution of materials. Much trouble and delay, it was set forth, is caused by the varying quality of goods as received, and not always the dealer or distributor's fault.

Great emphasis was laid on the severe tests to which the finished material for high tension service is subjected up to the "flash over" point. This high frequency test ranges to voltages far in excess of those used in regular commercial practice, being run to $2\frac{1}{2}$ to 3 times over without splashing.

Effect of Nickel Salt on Color

The last paper of the morning session was by G. M. Tucker, New York Architectural Terra Cotta Co., Long Island City, N. Y., on the subject of "The Effect of the Nickel Salt on the Color."

This dealt with the uncertainty of nickel salt when used for terra cotta glazes and covered in a brief way the speaker's experience in different experiments. It was hardly fair to say, he said, that nickel in certain glazes would produce a certain color, as such was not justified by actual findings. Specimens of different glazes were exhibited.

Election of Officers

At the close of the morning meeting, the nominating committee, of which R. L. Clare was chairman, brought in its report, recommending the following for election: R. H. Minton, president and chairman; Andrew Foltz, vice-president and vice-chairman; Charles A. Bloomfield, councilor; and George H. Brown, secretary and treasurer. This slate was carried by a unanimous vote.

The Executive Committee was announced as follows: Abel Hansen, chairman of the committee and ex-president; August Staudt, ex-president; and Charles Howell Cook, ex-president. The five officers whose term expires in 1922 are: F. A. Whitaker, Leslie Brown, R. L. Clare, F. W. Dinsmore and C. W. Crane; those to expire in 1923 are: Douglas J. Fisher, D. Parry Forst, C. S. Maddock, Jr., E. V. Eskesen and William Scammel. The officers with terms expiring in 1924 are: C. T. H. Phillips, Frank R. Valentine, O. O. Bowman, 2nd, Frederick Stanger and George Simcoe.

This makes a complete Executive Committee of twenty-two members.

The new officers were installed with appropriate remarks by the retiring president, Abel Hansen, and were escorted to the chair by ex-president August Staudt.

Enjoy Pleasant Luncheon

An enjoyable luncheon was served at the Hotel Klein to members and guests, and no time was lost in doing justice to the repast. But little more than an hour was given over to the meal, and the afternoon program was started shortly after two o'clock with President Minton presiding.

In opening the session, Mr. Minton made a few appealing remarks, asking for the hearty support of all members during the coming year. He spoke of the new ceramic school and said that its dedication in the early summer would mark a new epoch in the history of the ceramic industry of the state.

He urged increased membership and said that every member should strive to bring in at least one new member during the coming year. This, he said, would double the present number. There is much work to be done, he set forth, and every one in the business in the state is needed to accomplish the desired aims.

Properties of Some Ball Clays

The initial paper of the afternoon session was by H. H. Sortwell, Bureau of Standards, Washington, D. C., on the subject of "The Properties of Some Ball Clays." It was illustrated with a few interesting lantern slides.

Reference was made to the investigations being conducted by the Bureau, of various ball clays, including both imported and domestic materials. Tables were flashed on the screen showing the properties of the clays, including shrinkage, water, volume of dry shrinkage, plasticity, and so forth.

Mention was made of the burning behavior of American and English ball clays, including Kentucky and Tennessee specimens, Dorset and Devon. A comparison between the different varieties gave some interesting conclusions. Coloring effect, also, was noted, as well as other finer points in the utility of ball clays for different phases of manufacture.

Soft-Mud Fire Brick

The next paper was entitled, "The Manufacture of Soft-Mud Fire Brick," presented by F. B. Allen, of the M. D. Valentine & Brother Co., Woodbridge, N. J., and described the different features of production at that plant.

This factory was started in 1865 and has grown from a very modest one-kiln plant to a nine-kiln institution. New Jersey clays are used in the manufacture.

Each operation necessary in the manufacture of these brick was considered in the paper, showing, in full, the great sim-

plicity of the process and the care exercised in the production of high grade fire brick. The average output approximates about 600,000 brick per month.

Particular reference was made to plant re-arrangement, as recently perfected, for increased efficiency in operation. This work included the installation of considerable new and improved machinery, comprising a clay granulator; disintegrator; soft-mud brick machine; rack drying cars; dryer for first stage drying; power-driven re-press; double deck dryer cars; dryer for complete drying; gravity conveyor for kiln drawing; and storage battery lift truck and skids.

This apparatus was treated individually and described in detail.

Kiln Discussion

Owing to the illness and necessary absence of T. A. Shegog, ceramic chemist, Ell's-Foster Co., Montclair, N. J., the last paper on the program, "The Principles and Practice of Kiln Firing," necessarily was omitted.

In its stead, Mr. Minton suggested a general discussion of kilns, and opened the forum with a few brief remarks regarding tunnel and compartment kilns, explaining what he had seen in Germany in this direction on his recent trip. It was rather a peculiar thing, he pointed out, that while both types of kilns were used in Germany, yet the compartment kiln, originating in this country was being employed instead of tunnel kilns in England, where the tunnel kiln, itself, had been originated.

Interesting comments were made on the subject by August Staudt, Leslie Brown, T. A. Klinefelter, C. W. Hill and others, while Charles F. Geiger, of the Carborundum Co., Keasbey, explained a tunnel kiln now being used at that plant.

Mr. Cook Urges More Students

Before the conclusion of the meeting, Charles Howell Cook, who had been absent at the morning session, tendered a report of the Executive Committee, of which he has been chairman during the past year. He said that the work of the committee could best be shown by inspecting the new ceramic building in its present stage of construction, and soon to be completed.

He took occasion to urge that all members, and particularly officials of plants, try to interest young men in the institution, and said that there would be room for 60 students. Even in the present cramped quarters, the student roll has reached 17. He asked for hearty cooperation and support in the project, not in a financial way, but rather, moral support that would lend influence to the ceramic department and its work.

Accept 20 New Members

President Minton appointed a nominating committee for the selection of officers to serve in 1923, to be composed of F. B. Allen, T. A. Klinefelter and Henry Maddock. It was stated by the chair that a membership committee and finance committee would be appointed later.

It was just about time for adjournment when Mr. Cook started a little membership "drive" in proposing a name for a new member. It started the "ball rolling," and closely followed by Mr. Bloomfield, Mr. Hansen, Homer F. Staley and others, it was not long before Secretary Brown had recorded over 20 new members for the association.

Those in Attendance at the Meeting

Professor George H. Brown, Department of Ceramics, Rutgers College, Andrew Foltz, Lambertville Pottery Co., Lambertville, N. J.; H. F. Kleinfeldt, secretary, the Abbé Engineering Co., New York; Robert A. Bantz, Isco-Bantz Co., Murphysville, Ill.; E. C. Hill, Conkling-Armstrong Terra Cotta Co., Philadelphia, Pa.; S. O. Conkling, Conkling-Armstrong Terra Cotta Co., Philadelphia, Pa.; G. M. Tucker, New York Architectural Terra Cotta Co., Long Island City; Abel Hansen, Fords Porcelain Works, Perth

Amboy, N. J.; August Staudt, Perth Amboy Tile Works, Perth Amboy, N. J.; Charles A. Bloomfield, Bloomfield Clay Co., Metuchen, N. J.; Howard W. Bloomfield, Bloomfield Clay Co., Metuchen, N. J.; H. H. Sorwell, Bureau of Standards, Washington, D. C.; F. S. Thompson, Freehold, N. J.; R. N. Long, Federal Terra Cotta Co., Woodbridge, N. J.; Charles T. H. Phillips, Sneyd Enameled Brick Co., Trenton, N. J.; A. I. Appelbaum, Trenton, N. J.; George Simcoe, Electrical Porcelain & Mfg. Co., Trenton, N. J.; James R. Smith, New Jersey Porcelain Co., Trenton, N. J.; Frank W. Morris, Morris China Co., Trenton, N. J.; F. W. Dinsmore, Imperial Porcelain Works, Trenton, N. J.; Charles Howell Cook, Cook Pottery Co., Trenton, N. J.; Thomas G. Flavell, Innis-Spieder Co., New York, N. Y.; F. B. Allen, M. D. Valentine & Brother Co., Woodbridge, N. J.; Charles H. DeVoe, Old Bridge Enameled Brick & Tile Co., Old Bridge, N. J.; Kenneth E. Ward, Newark, N. J.; W. Malsh, Roessler & Hasslacher Chemical Co., New York, N. Y.; Otto Will, Roessler & Hasslacher Chemical Co., Perth Amboy, N. J.; Homer F. Staley, Metals & Thermit Corporation, New York, N. Y.; R. O. Leongard, Metals & Thermit Corporation, New York, N. Y.; Leslie Brown, Lenox, Inc., Trenton, N. J.; LeRoy W. Allison, Newark, N. J.; George W. Coxon, Trenton Porcelain Co., New Brunswick, N. J.; Mark Sheppard, Philadelphia, Pa.; Enoch Mountford, Trenton, N. J.; Paul G. Duryea, Cook Pottery Co., Trenton, N. J.; C. H. Lovett, Cook Pottery Co., Trenton, N. J.; M. M. McHose, McHose Clay Co., Perth Amboy, N. J.; Paul Crammer, Trenton, N. J.; Frederick Stanger, Enterprise White Clay Co., Philadelphia, Pa.; Richard J. S. Barlow, Roessler & Hasslacher Chemical Co., Trenton, N. J.; O. Otis Bowman, 2nd, Trenton Fire Clay & Porcelain Co., Trenton, N. J.; J. E. McAllister, Trenton Fire Clay & Porcelain Co., Trenton, N. J.; Fred E. Whitaker, General Ceramics Co., Keasbey, N. J.; R. H. Minton, General Ceramics Co., Metuchen, N. J.; William Chell, Empire China Works, Brooklyn, N. Y.; Daniel P. Forst, Robertson Art Tile Co., Trenton, N. J.; Arthur D. Forst, Jr., Robertson Art Tile Co., Trenton, N. J.; Oscar E. Mathiasen, New Jersey Terra Cotta Co., Perth Amboy, N. J.; Alfred Mathiasen, Matawan Tile Co., Matawan, N. J.; Henry Hansen, Fords Porcelain Works, Perth Amboy, N. J.; Thomas Layden, Fords Porcelain Works, Perth Amboy, N. J.; I. A. Hansen, Fords Porcelain Works, Perth Amboy, N. J.; D. H. Applegate, Jr., Kreischer Clay Co., Charleston, S. C.; R. E. Anderson, Robertson Art Tile Co., Trenton, N. J.; C. C. Engle, United Clay Mines Corporation, Trenton, N. J.; C. W. Hill, Atlantic Terra Cotta Co., Perth Amboy, N. J.; R. V. Tarlby, Rutgers College, New Brunswick, N. J.; C. C. Clarke, Rutgers College, New Brunswick, N. J.; John B. Maddock, John Maddock & Sons, Trenton, N. J.; Charles F. Geiger, The Carborundum Co., Perth Amboy, N. J.; August Zellman, Fords Porcelain Works, Perth Amboy, N. J.; T. A. Klinefelter, Atlantic Terra Cotta Co., Tottenville, S. I.; M. G. Hartmann, assistant secretary, Department of Ceramics, Rutgers College; John Maddock, John Maddock & Son, Trenton, N. J.; S. Habas, Rutgers College, New Brunswick, N. J.; Joseph Boughay, Hanovia Chemical & Mfg. Co., Newark, N. J.; F. B. Parsons, Atlantic Terra Cotta Co., Perth Amboy, N. J.



ENGLISH ENGINEER APPROVES BRICK ROADS

Efforts of the state legislature to meet the problems of wear and tear on the highways by limiting the weight of the loads hauled will not be the ultimate solution, in the opinion of A. Dryland, County Engineer, of Middlesex, England.

Mr. Dryland has just completed a tour over 2,500 miles of road in Ohio, Illinois, Michigan and several of the Eastern states. Mr. Dryland is past president of the County Surveyors' Society of England, and has devoted 40 years to the study of road-building.

"The large number of motor vehicles to be seen in and around your cities was very striking," says Mr. Dryland. "The great difference between your traffic and ours is in the heavy motors, of which you have comparatively few. Some of your road engineers seemed to think that they had large numbers of the heavy type to contend with, but I had to tell them their troubles were only beginning."

In speaking of old concrete roads, which require repairs, Mr. Dryland says, "Your problem is to decide whether you will reface with concrete or adopt something of a more resilient character. My own view is that you will eventually find it desirable to take the latter course."

"Brick pavements, I observed, are much used in the environs of large cities, and the smaller urban areas, and struck me as having a pleasing appearance and affording quite good traveling surfaces. An elastic joint filler would, I think, be a great advantage."

Mr. Dryland heartily endorses the American system of training highway engineers, and envies our state bureaus for testing and investigation.

A Model Remodeled Plant

Centralized Crushing and Grinding Units—Brick Burned on Same Car It Is Dried Upon—Labor Reduction,—Increased Production,—Higher Quality Ware,—Shortening of Manufacturing Time—All Net a Remarkable Reduction in Production Cost of Over Seven Dollars a Thousand

Editor's Note—The accompanying story is one that could just as well apply to nine out of ten other clay plants where the management has the vision, courage, ambition and good business sense equal to W. L. Hanley, Jr.

There is need in the clay industry for a great deal of junking of obsolete and worn-out, inefficient equipment, and the rebuilding of factories to permit lower production costs. Hence the story of the rehabilitation of the Bradford Brick & Tile Co. will be of particular interest, unusually instructive, as well as serving as a guide for manufacturers.

A large number of men in the industry have recognized the need for plant reconstruction. This has been indicated by articles published in Brick and Clay Record in recent months, showing notable examples of what some plants have done in cost reducing efforts. However, there are too many plant owners who are under a misapprehension, and who feel that because their plant is an old one and not constructed along modern lines, or because its layout is not the best, that they cannot consider the matter of remodeling their factory and installing cost saving equipment.

Reductions in production costs is the cry of the present industrial period. The accompanying story which tells how the Bradford Brick & Tile Co. accomplished remarkable results should be an inspiration to every clay plant operator.

WHEN A CLAY PLANT expends an enormous sum of money and considerable time—not for expansion, mind you, but for decreasing production costs—there must lurk therein an interesting story concerning what has been accomplished. Curiosity on this point is well founded, and an investigation of the plant amply rewarded, because of the many innovational features applied. This plant is the Bradford (Pa.) Brick & Tile Co. factory, to which some reference has already been made in the November 1 issue of Brick and Clay Record.

What had heretofore been considered impossible in brick manufacture has been accomplished. Among the many particularly interesting phases is the process adopted whereby the brick taken from the molding machine are placed directly onto cars which, after passing thru a dryer, are directed thru a car tunnel kiln, saving by this method one complete rehandling. Yet this is only one of the many cost reducing and absorbing features that make the study of the processes used by this remodeled plant of extraordinary interest.

Ideas Borrowed From Other Industries

A considerable amount of pioneer work was necessitated in locating cost cutting methods. Many of the ideas were borrowed from the more progressive industries, particularly the cement industry, regarding the movement of raw material, and from the steel and glass industries regarding fuel economy. When Mr. Hanley, general manager of the Bradford Brick & Tile Co., told others who had devoted their lives to the manufacture of clay products, what he purposed to do, they shook their heads and wondered as to Mr. Hanley's sanity. Even concerns supplying equipment questioned his schemes, and only after going to the head of one of the dryer manufacturers was Mr. Hanley able to work out one of his schemes.

But this is a day of revolutionary changes in production

methods. Periods of depression usually usher in new ways of doing things—and the clay products industry has an additional force that is acting on it. The industry is steadfastly shaking off the invisible shackles that have confined it to obsolete methods. It has broken its relations with Rip Van Winkle, and men in other industries have expressed surprise at the recent wonderful progressive measures that have been adopted.

Plant Kept Operating Since 1890

The history of the Bradford Brick & Tile Co. is quite interesting. It should be said that the Bradford Brick & Tile Co. operates three plants—two of them adjacent to each other at Lewis Run, which is about nine miles south of Bradford, and one in Bradford itself. The Bradford plant produces at present 100 tons of hollow building tile daily, while the factories at Lewis Run manufacture together approximately 2,000,000 dry press and stiff mud brick a month. The old plants were constructed way back in 1890, and except for a few short recesses due to repairs and once because of a strike, the plants have never shut down but have kept on operating, business depressions notwithstanding.

The senior William Hanley, who is chairman of the concern, some years ago entrusted the operation of the plant to his son, William L. Hanley, Jr. W. L. Hanley, Jr., is a young man with a college education well grounded with an extensive business training, and who has the progressiveness and imagination and enthusiasm that are possessed by such men. He believed that despite what other men in the business said could not be done, there were untold possibilities for improving clay products manufacture if only the proper thought and study were given. He had faith in his belief to the extent of completely remodeling one of the three plants referred to before, and junking

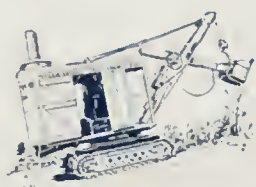


ERIE Steam Shovels pay profits to Bradford Brick & Tile Company even when production is below normal

They always find work for their ERIES, even in time of decreased demand for raw materials for clay products.

In the times when every dollar of your capital counts most, you don't want a shovel that can only be used for clay and shale excavation—but you need a shovel that gives equally good results in road grading, trenching, cellar digging and other classes of excavation.

We will be glad to send you our 24-page bulletin, full of photos and descriptions showing what the ERIE can do getting out clay and shale—and many other kinds of work. Write for Bulletin B-16.



For working in a muddy pit, or for traveling over rough ground, the ERIE caterpillar type mounting saves considerable time by eliminating the necessity of planking the shovel.

The ERIE caterpillar type mounting has many unique features: COMPLETE LUBRICATION of treads and rollers. POWER STEERING from the cab, without a man on the ground to throw clutches. And many other advantages which are interestingly described in our new Bulletin B-60. Write for a copy.

The Bradford Brick and Tile Co., of Bradford, Pa., own the ERIE Shovel shown above, and two others besides. They are using all three ERIE Shovels to good advantage—*regardless* of the fact that production is at present *below normal*. They write us:

"We are operating one shovel in the pit, and it is taking care of two good-sized plants with an output of 250 yards per day. Later it will be called upon to handle 400 yards of shale.

"Our second shovel is being used on construction work and the third has been rented to a State Road contractor.

"We cannot say too much for the ERIE Shovel. Our three, after having operated continuously in our pits for from 3 to 5 years each, have cost us an average of only \$23 each in upkeep so far this year."—D. Hendryx, Asst. Gen. Mgr., Bradford Brick and Tile Co., Bradford, Pa.

The ERIE Shovel is one machine that earns you profits even in dull times, because of its all-around usefulness. Your ERIE can always be an active asset—even while your plant is shut down.

And when you are again operating at full capacity, you can depend on your ERIE to get out a steady supply of raw materials, and give large output at trifling cost of maintenance.

BALL ENGINE CO., ERIE, PA., U. S. A.

Builders of ERIE Steam Shovels and Locomotive Cranes
Branch Offices: New York, Boston, Pittsburgh, Chicago
Representatives throughout U. S. A.

ERIE *Revolving Shovels* **BALL**
Engine Co.
Erie, Pa.

much machinery, periodic kilns, and other material, that had been in service 25 years.

No. 1 Ware Increased From 65 to 95 Per Cent.

According to the old method of manufacture, which meant burning in rectangular down-draft kilns, 30 per cent. of the brick manufactured were commons or seconds and five per cent. were culls and bats. The market for common brick was gradually becoming smaller and more confined, and Mr. Hanley figured that the time was not far away when it would be really a difficult matter to dispose of common brick on account of the growing use of hollow tile.

Further than this, it requires the same care and labor to produce commons as it does face brick, but the price received is very much less—cutting down profits proportionately. Under present conditions 95 per cent. of the ware burned is No. 1 ware, hence an enormous reduction in cost has been made possible by virtue of increasing the production of No. 1 ware.

Scrap Ten Periodic Kilns

"The time to remodel a plant is during a period of depression," says Mr. Hanley. Accordingly, he went at it, tooth and nail, and with the aid of his engineer, D. B. Hendryx and his superintendent P. Cannon, commenced a year ago to make plans for the remodeling of one of the units that meant the scrapping of much equipment and the rearrangement of practically

all of what was left. It was considered cheaper to scrap the old kilns and make use of the present switch track and stock shed than to keep the old kilns and build on an entirely new location. Thus ten intermittent kilns were completely demolished and the debris removed by means of a steam shovel.

One Pit Furnishes All Clay

How the winning of the clay and the raw material is handled is a complete story in itself. It is difficult to describe in detail and bring out all the points concerning this phase of the plant operation, but the following description should give the reader a fair comprehension of what the Bradford Brick & Tile Co. is striving toward. The shale for all three plants is obtained from a high hill a considerable distance above the plant and across the Buffalo, Rochester & Pittsburgh R. R. tracks. The shale is of a fairly hard variety, and requires preliminary drilling and blasting before being gathered by the steam shovels. A steam drill and dynamite are employed in preparing the clay bank for the steam shovels.

Crusher Located at Shale Bank

The face of the bank is 60 feet high and only a short depth of overburden five to one foot thick, overlays it. A 30-foot clam-shell boom is attached to the steam shovel and the overburden stripped for a considerable distance and dropped down into the pit below, from where a second steam shovel moves the material



By Using Two Steam Shovels Simultaneously, a Better Mixture of the Clays Is Obtainable. This View Shows Working Face of Clay Pit and Gasoline Locomotive and Quarry Car.

How Goodman Locomotives Helped Reduce Bradford B. & T. Co. Costs

CUTTING PRODUCTION COSTS

seven dollars per thousand means more efficient digging, haulage, forming and burning.

BRADFORD BRICK & TILE CO.

states that their GOODMAN
Electric Locomotive:—



“Costs about $\frac{1}{4}$ of cost of gasoline locomotives, including repairs.”

“Has given us no delays.”

“No Gasoline, oil or water to bother with, and only about 1 hour repairs in last year.”

GOODMAN MANUFACTURING COMPANY

PITTSBURGH
NEW YORK

48th to 49th Streets on Halsted
CHICAGO, ILL.

BIRMINGHAM
ST. LOUIS

CINCINNATI — CHARLESTON, W.VA. — SEATTLE — DENVER

out of the way. In this manner enough stripping is dispensed with in one day to last from four to six weeks with very little cost and without much handling.

The floor of the shale pit is a layer of hard sand rock 16 feet thick. Under this again is another layer of shale, but this is not worked. The sand rock forms a table about 100 feet wide from the face of the bank, after which there is an abrupt drop and the next level is some 40 or 50 feet below. At the edge of this rock table is located the preliminary crushing plant.

Here all of the shale is reduced in size before being conveyed to the factory.

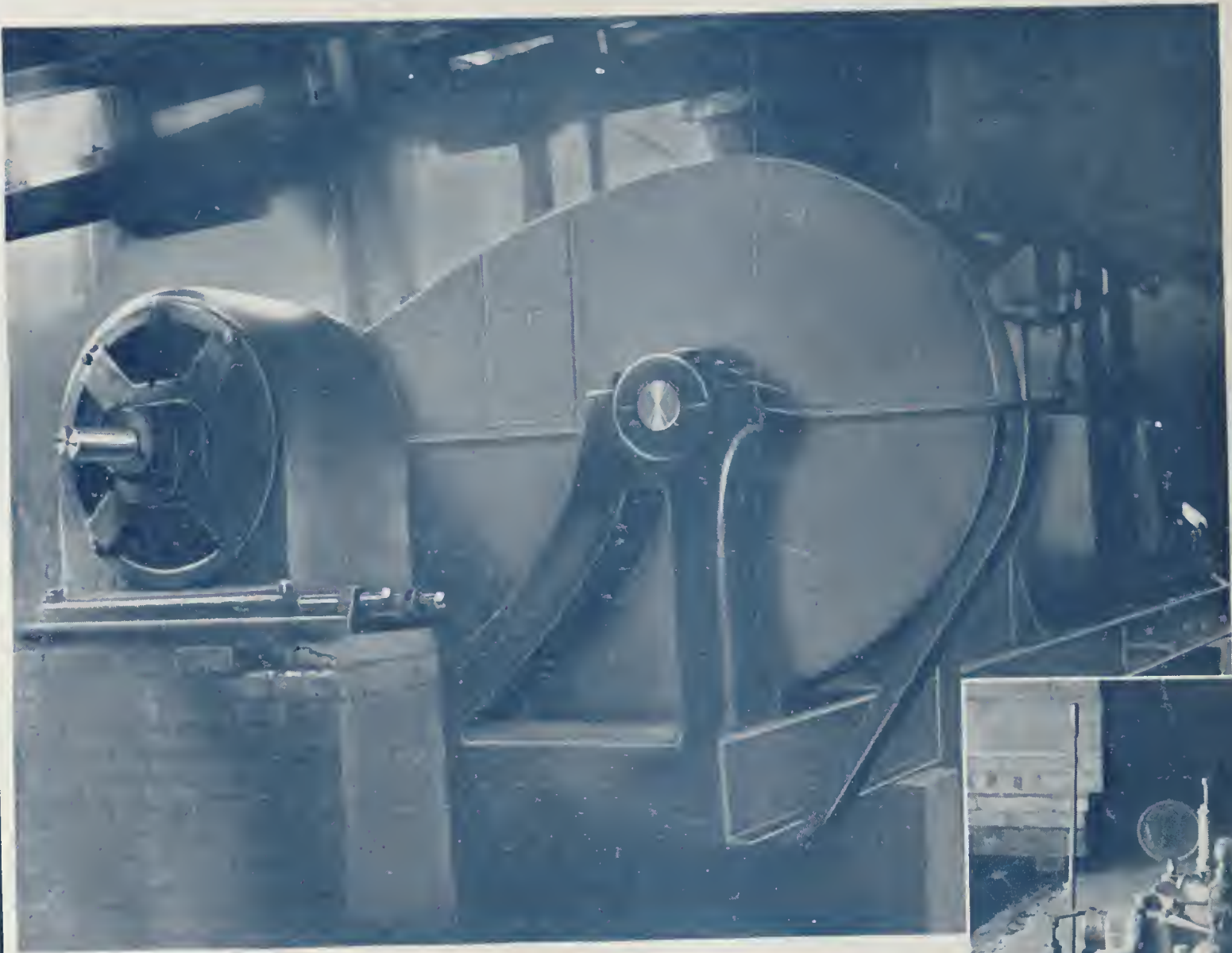
Automatic Tripping Car Saves Labor and Time

The shovels—two are now in use in order to get a better mix—when they have loaded their buckets deposit the clay in a large car measuring eight feet long by six feet wide. The car has a capacity for six yards of clay. It will be noted that this is an exceptionally large size car, but it has been found desirable since it permits the easy loading by the steam shovel,



This Splendid View of the Both Levels of the Clay Pit Shows Partially the Steam Shovel, the Dump Car in Act of Dumping, the Locomotive on the Upper Level, the Preliminary Crusher, Clay Hopper, Electric Locomotive and Transportation Cars.

How Morse Silent Chain Drives Helped Reduce Bradford B. & T. Co. Costs

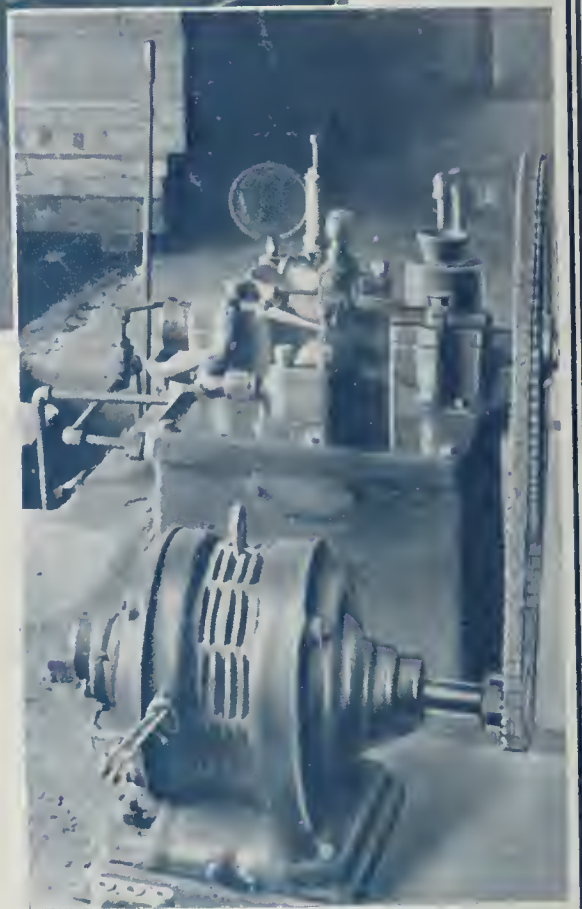


The above is a picture of the new Bradford Brick & Tile Co. plant where efficiency, reliability and economy received equal consideration. **MORSE CHAIN DRIVES** were chosen by the engineers on account of their superiority in these respects.

The installation shown above is a good representation of what the **MORSE DRIVES** can undergo with 98.6% efficiency.

The use of Morse Chain Drives is widespread. Large and small plants find economy through their use.

If your belts are subjected to unusual conditions of wear and exposure, or if you are losing power and money through belt slip, let the Morse Engineers help you. They gladly render assistance without obligation.



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MORSE CHAIN CO.

LARGEST MANUFACTURERS OF
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Benefit by Morse Service as others do.

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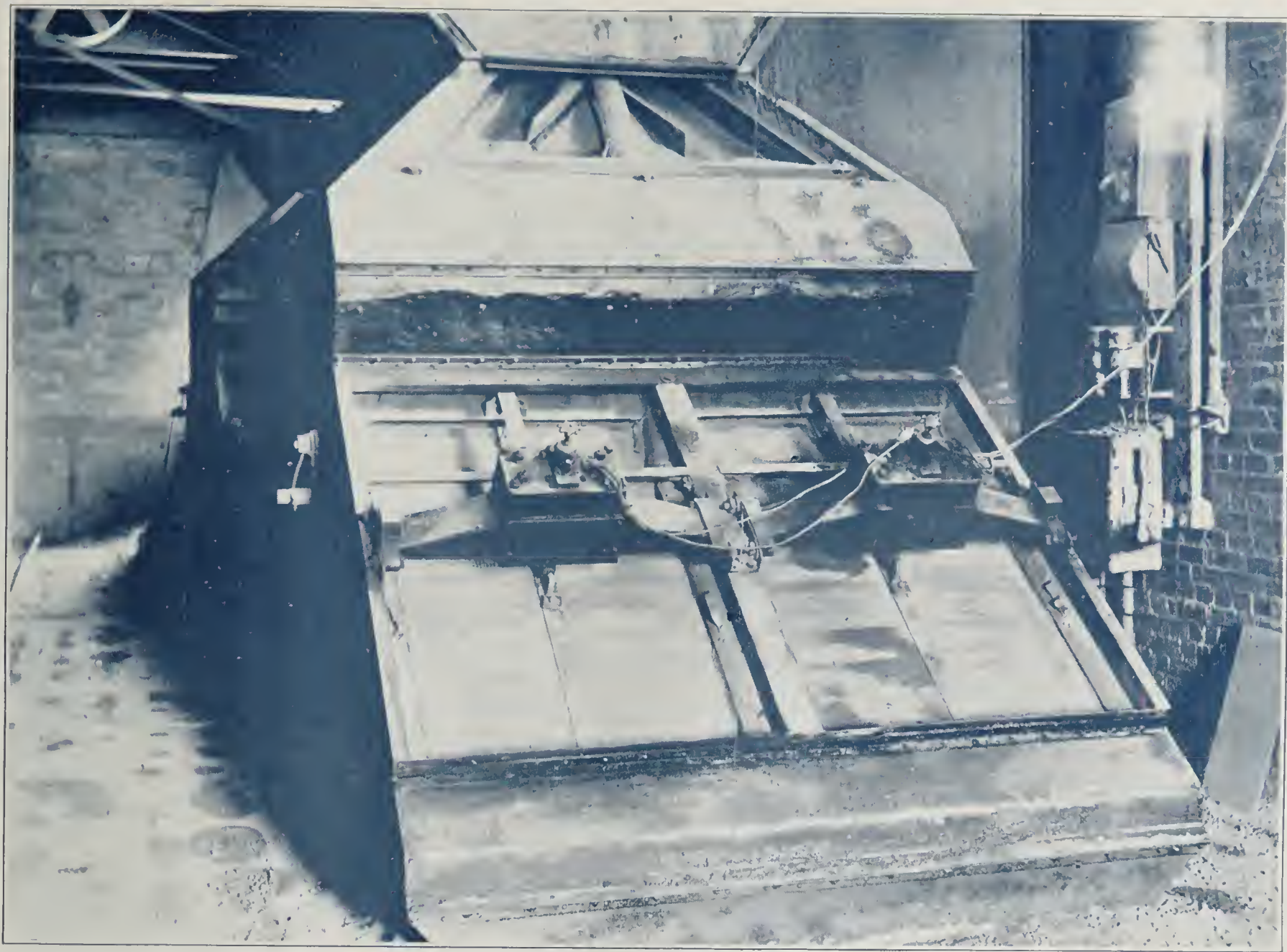


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DETROIT, MICH. 1361 Abbott St.
KANSAS CITY, MO. Finance Bldg., Morse Eng'g Co.
NEW YORK CITY. 50 Church St.

MINNEAPOLIS, MINN. So. 3rd St., Strong-Scott Mfg. Co.
MONTREAL St. Nicholas Bldg., Jones & Glassco Reg'd
PHILADELPHIA 208 Fuller Bldg.
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TORONTO Bank of Hamilton Bldg.,
Jones & Glassco Reg'd
WINNIPEG, MAN. Dufferin St., Strong-Scott Mfg. Co.



"MORSE" is the Guarantee Always Behind the Efficiency, Durability and Service



Vibrating Clay Screens Which Are Called Upon to Perform Much Greater Work Than Screens on Ordinary Plants.

saving time and it reduces the amount of clay which is spilled over the sides of the car, and which requires the employment of roustabout labor to clear away.

The car has another special feature which is unusual and noteworthy. It is built so that it is tripped automatically, thereby dumping its load, and then uprights itself when it has deposited its burden. A gasoline locomotive draws this dump car from the shale bank to the hopper feeding the preliminary crusher. In traversing this distance the train must run in two opposite directions, necessitating a switch arrangement. This switch, however, operates automatically. The simplicity and ease with which the car as it approaches the hopper, dumps itself and then uprights itself as it is pulled away again, without the aid of any labor, is remarkable. Incidentally the labor cost saving is considerable. Thus the operation of the plant up to the point of the crusher requires only three men—two to operate the steam shovels and one to operate the locomotive.

Shale Preparation Capacity 500 Tons

The man in charge of the crusher takes care of the odds and ends around the pit, of which there is but very little.

The crusher, which is a 21x42 single roll type, handles the shale as it comes from the bank and is fed automatically from the hopper. It reduces the size of the shale and distributes it into the hoppers below. The flow of the crushed clay is controlled by metal gates, which when opened permit the clay to fall into a train of V-shaped iron mine cars which are drawn by an electric trolley locomotive, the train being required to pass thru a tunnel under the B. R. & P. R. R. tracks.

The entire unit thus far described is handled by four men altho only three would be absolutely necessary and has a capac-

ity for 500 tons of clay per day, but at the present time approximately only 350 tons are being prepared.

Dry Pans Have No Screen Plates

The clay which is brought to the factory from the crushing plant is dumped into hoppers located in front of the dry pan. By means of apron feeders 18 feet long driven by a five horsepower variable speed motor with worm-gear drive, there is a constant feeding of the partially crushed clay into the dry pans. The dry pans are of a new type, and are the first to have been installed, according to a new design. Their construction is very interesting. Because of the fact that in the ordinary type of dry pans the screen plates and scrapers wear rapidly and consume a lot of power, these parts have been omitted in this pan, and with this omission it is claimed to be possible to double the speed of the working parts, with the result of doubling the capacity without increasing the use of power, at the same time reducing greatly the wear and tear.

The grinder is much larger than dry pans are usually made, the mullers being 60 inches in diameter by 16-inch face, and other parts being made in proportion. The old type of dry pan used on this plant had a face of only 10 inches. Moreover, the mullers weigh seven tons each, as compared to two tons each on the old type of machine.

Three Pans for 500 Tons

The design of this machine includes some points of unusual interest. The bearings are all bored and bushed with interchangeable bushings. They are reservoir oiled and the glass gage shows the quantity of oil in the reservoir. All bearings, even the step bearing, may be oiled from the floor whether the

The Following
Burke Electric Company

Apparatus is Helping to
 Reduce Bradford Brick and Tile Company Costs

- 3 Engine Type Generators in the Power House.
- 1 Large Motor Generator set for supplying Direct Current to the Cranes, Hoists and Locomotive.
- 3 Special Vertical Motors for Driving Dry Pans.
- 42 Motors of various sizes from 5 HP. to 100 HP. for operating machines throughout the plant.

We solicit an opportunity to assist you in reducing your cost.
 We are among the pioneers in the Application of Electric Drive in the Brick and Clay Industry.

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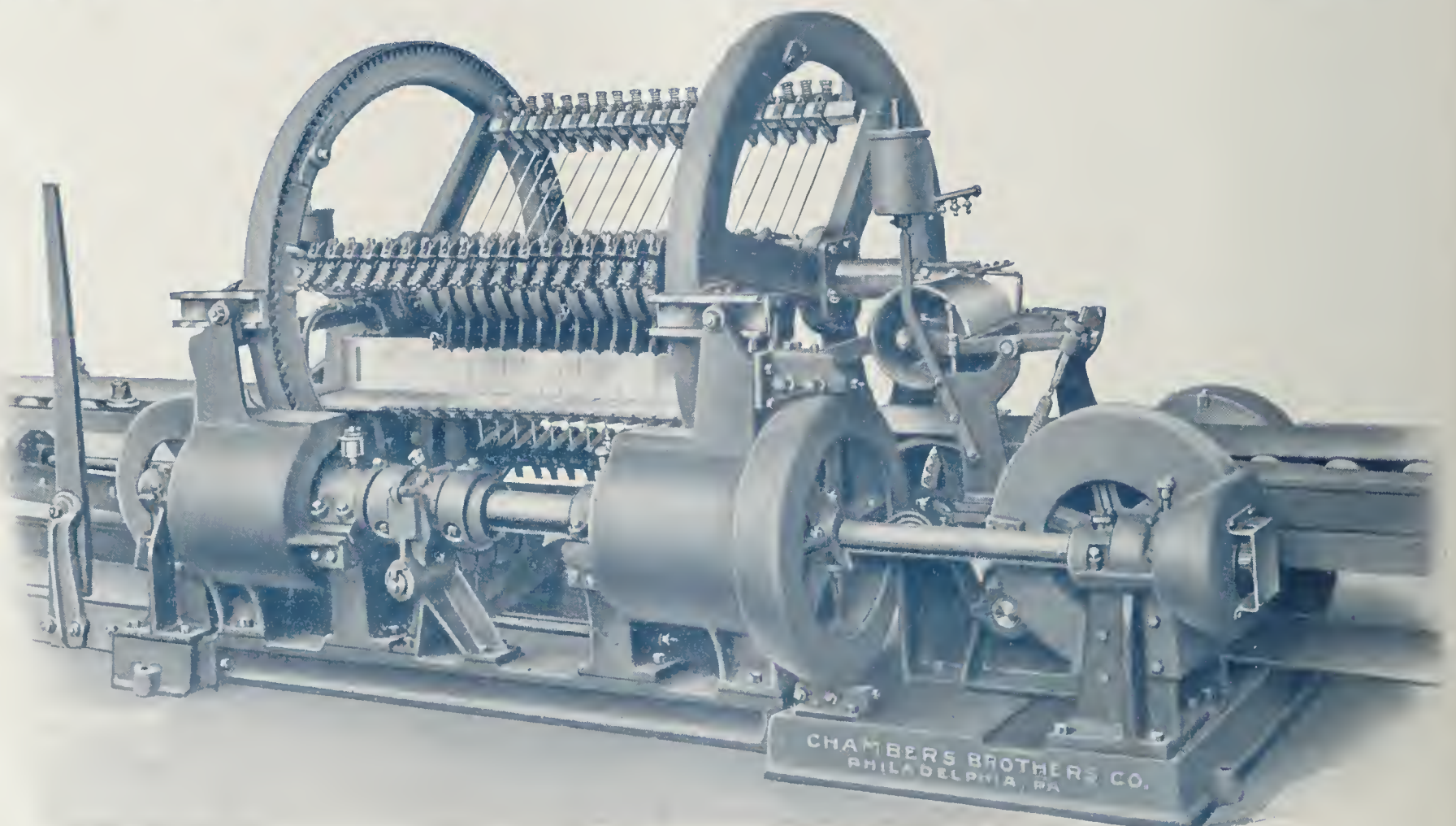
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KANSAS CITY: W. T. OSBORN

MULTIPLE BRICK AND BLOCK CUTTER



CHAMBERS BROTHERS COMPANY - Philadelphia, Penna.

machine is in operation or idle. The step bearing holds nine gallons of oil and does not require frequent oiling. The vertical bearing in the cross head is provided with a packing gland to retain oil so that all bearings and gears have copious lubrication. The mullers are both hinged from the same shaft, leaving the front of the machine ready for supplying raw material.

The driving gear of this machine is of considerably greater diameter than on the ordinary pan, and operates at a speed of 25 to 48 r.p.m. It is driven by vertical motors. Each pan—there are two of them already installed and a third in process of installation—weighs 33 tons. The power consumption of each pan varies between 47 and 59.5 horsepower as against 40 to 50 horsepower for the old style pan.

Elevators Given Special Consideration

The clay which is crushed drops into a chute and is elevated by chain type bucket elevators to the screens. The buckets are 16 inches wide and the elevator constructed so that its parts are easily accessible and it may be easily cleaned or repaired. The plant has experienced but one shut-down due to the elevators during the past two months of continuous operation. The ground clay is passed over four electrically operated automatic vibrating screens for each pan. The coarse material aids in keeping the screen clear and passes over and back onto the dry pans. The fine material is crushed to a fineness equivalent to 14 mesh. Preparations are being made to place worm gears on the transmission operating the bucket elevators, each of which are driven by 20 horsepower electrical motors, individual drive. This arrangement enables one man to handle the screening up to 500 tons a day.

Two New Model Pans Replace Seven Old Ones

Were screen plates used on the dry pan, a 15 horsepower motor would only be required for the bucket elevator. Thus

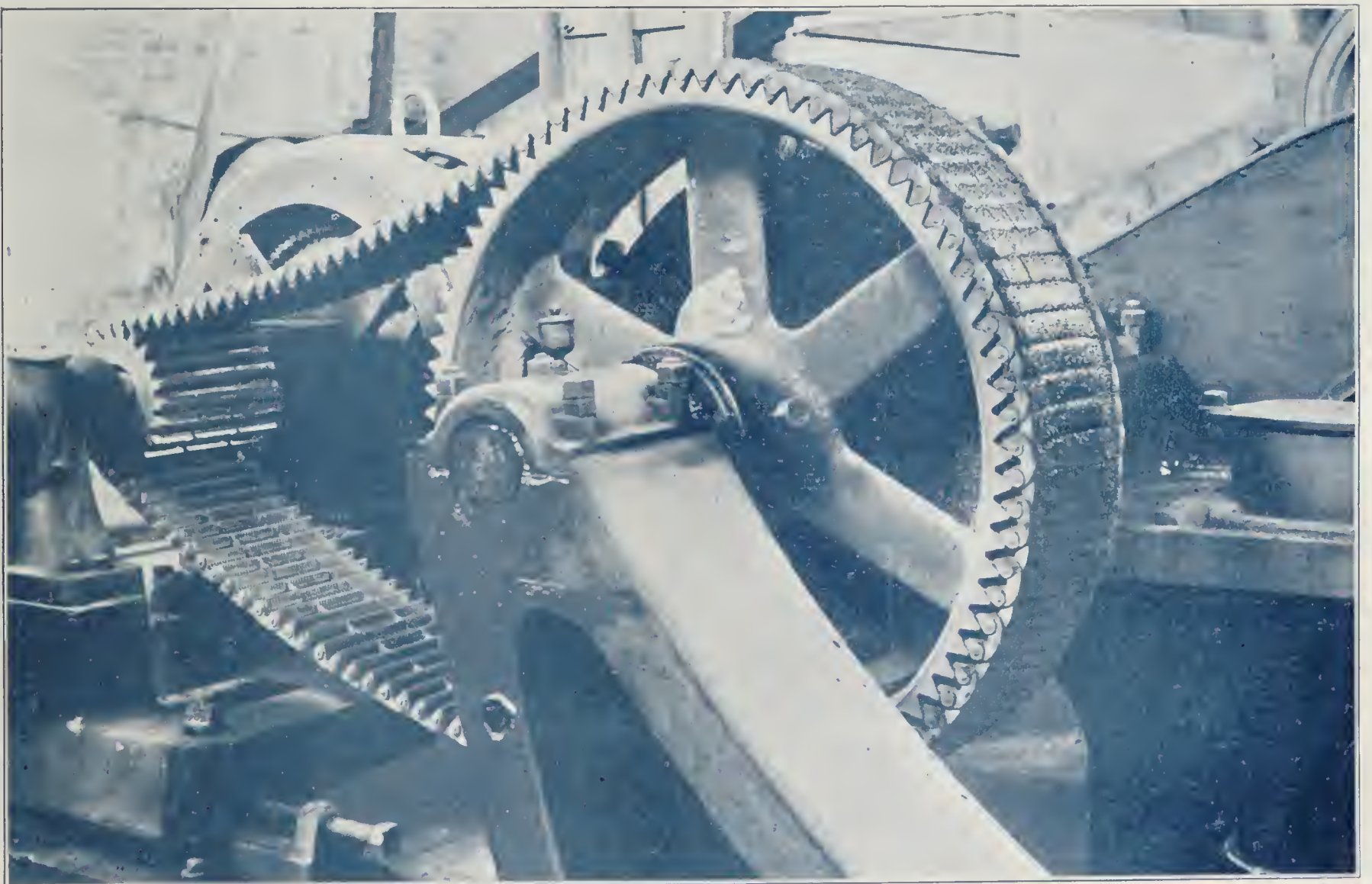
the additional power required for elevating all of the clay is not very great. However, were screen plates used there would be required more crushers, necessitating more elevators, thus in the aggregate requiring more power anyway—perhaps twice as much. 20 tons of clay are ground per hour per dry pan, and the two pans now installed are doing the equivalent amount of work that seven old style pans formerly did. Thus the junking of the old pans and the installation of new equipment resulted in a saving which made the investment well worthwhile.

The screened clay falls into large storage bins, from which it is fed by disk feeders onto conveying belts which transport the material to hoppers feeding the various machines that mold the brick or tile. A 600-foot long belt conveyor, built directly over the rectangular kilns, on one of the plants, conveys the clay from the grinding plant to the new plant, and also to a loading station where the ground clay is loaded into hopper-bottom steel cars, which supply the clay for the hollow tile plant in Bradford. This conveyor is built in two sections and is controlled by one operator. By pressing a button this operator controls the mechanical equipment on this conveyor to a point 600 feet distant and also the clay feeder there.

Many Flexible Couplings Used

In the stiff mud brick section of one of the plants a chain drive transmission is used on the pug-mill and brick machine. This outfit is operated by a 100 horsepower induction motor, 440 volts, three phase. A new unit has been installed at the new plant whereby a 100 horsepower slip-ring motor geared directly to the shaft, the gears running in oil, is the driving unit. The dry press machine is of the four mold type, which can manufacture 44,000 brick in 24 hours. This requires a three shift labor force on this machine, which is driven by a 15 horsepower motor with a chain drive transmission.

It might be added at this point that all the electrical motors



A Rugged Chain Drive Transmission Used as the Connecting Link Between Heavy Clay Machinery and a Powerful Electric Motor.

How Freese Machinery Helped Reduce Bradford B. & T. Co. Costs

AND AT BRADFORD, PA.—

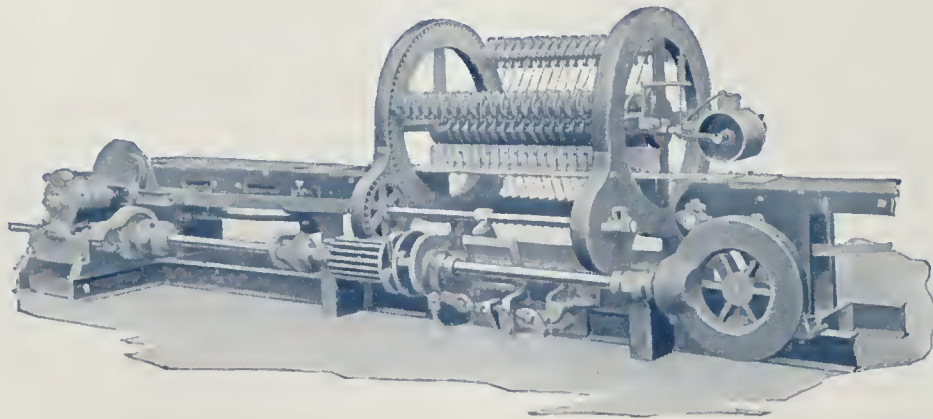
The Bradford Brick and Tile Co. use a Freese Rotating Automatic Cutter Model C 20 to cut their famous "Reds."

Freese Machinery is equally successful for the manufacture of face, common builders and pavers brick and for hollow ware as well.

The selection of Freese Machinery for use in the Bradford Plant was a matter of special gratification to our organization as it again proved the superior ability and quality of our machinery.

E. M. FREESE AND COMPANY GALION, OHIO

Dependable Machinery of Proven Efficiency



FREESE ROTATING AUTOMATIC CUTTER

on this plant, of which there are approximately 50, are blown out once a week with compressed air and the bearings washed out with gasoline to clean out the old oil.

Moreover, it is of interest to know that flexible couplings are used on nearly every motor drive, and due to the fact that nearly all transmissions are individual motor drives, there are some 30 of these flexible couplings installed.

Brick Dried and Burned on Same Car

As far as the remaining operations in the manufacture of brick are concerned it is chiefly with the methods of production used at the new plant—that is, the remodeled plant—that we are interested in. The brick are taken directly from the dry press machine by two men and loaded onto the tunnel kiln car, which is constructed so that the top slabs are perforated with small holes except for the outer one-half foot border of the car top. The brick are loaded on the car 13 courses high,

obtained from the cooling zone of the kiln, which is pure hot air, and this air is circulated thoroly in the dryer by means of recirculation fans. The waste heat from the kiln, that is, the hot combustion gases, are also used and are passed thru six-inch cast iron pipes, which are located above the cars in the dryer.

This dryer dries 40,000 brick per day, as compared with the old waste heat dryer, which was 90x90 feet in size, but which had no greater capacity. The saving in space is considerable, and the drying much safer, practically all trouble having been eliminated. Space has been reserved for another dryer unit which will take care of the second kiln that is planned to be erected as soon as business conditions warrant expansion.

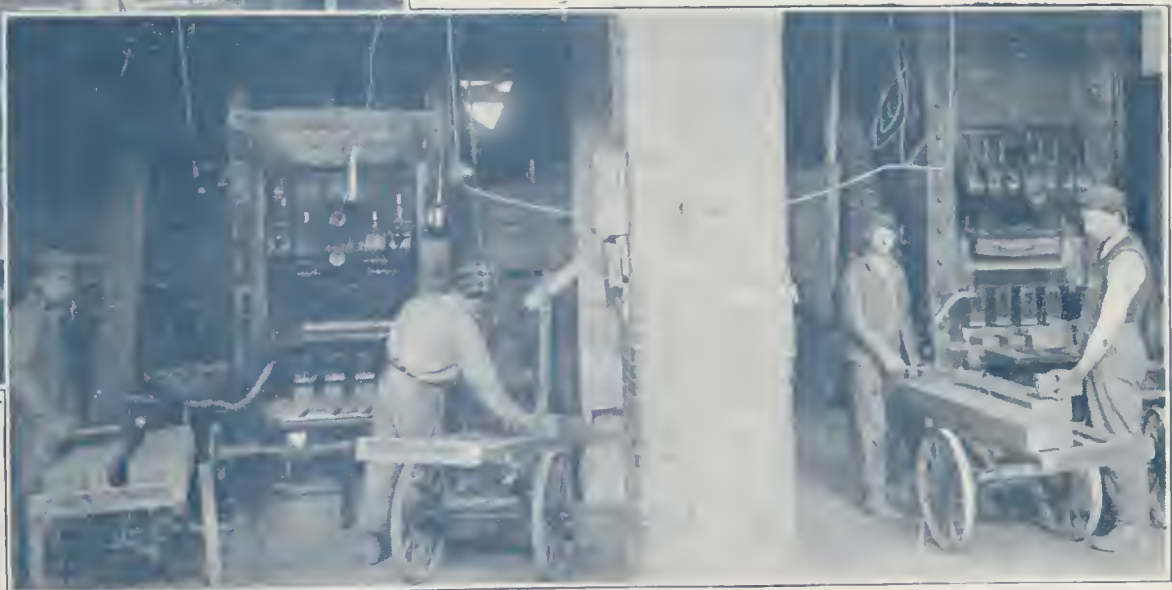
From the dryer the brick are transferred to the kiln, but on the same car, this being the first change in direction of the product. By means of a new type of mechanical pusher, which operates by electrical motor and worm-gear drive, the car is pushed slowly and uniformly into a muffle type tunnel kiln, pushing all cars in front of it ahead as it progresses thru the kiln.

Burning Time Reduced From Ten Days to 55 Hours

The kiln is 337 feet long, and the cars are placed in the kiln at the rate of one every 48 minutes. There are 67 cars in the kiln at any time, and each car, it is claimed, requires about 55 hours to pass thru the entire length of the kiln. Thus 55 hours are required for the brick to pass thru all the burning and cooling stages, making them a finished product. With the rectangular periodic kiln it formerly required about six days' burning time, plus four days' cooling, be-



Above Is Shown New Method of Manufacture Whereby Brick Are Loaded Directly Onto Car from Dry Press Machine. On the Right is Shown the Old Method of Making Brick, Which Is Not Nearly As Efficient.



1,080 brick being the full load of each car. The cars measure five feet square on top, and the height from the floor to the platform is two feet seven inches. The stiff mud brick unit is not yet under operation, but as soon as it will be the brick will be loaded on dryer cars in the same manner as the dry press brick. This setting has already been tried and found practicable.

The loaded cars are pushed by electrical industrial trucks to the dryer, but it is contemplated to install a monorail system which will pull four loaded cars at one time.

Drying Space Reduced From 8,100 to 1,125 Square Feet

The cars are placed in an automatically operated special dryer which measures 75 feet long by 15 feet wide, and has two tracks. A new and novel hydraulic ram is used for pushing the loaded cars thru the dryer. The heat in the dryer is

fore the brick were matured. As mentioned before, the brick which come from the tunnel kiln are more uniform in shape and quality, and there is very little loss due to culls or No. 2 ware. There is about one-half a shade difference between the color of the stiff-mud and dry press brick burned in the tunnel kiln.

The kiln is fired with natural gas, there being six burners at 15-foot intervals on each side. Thus a hot zone of approximately 90-foot length is maintained. The heat is kept at a temperature in this hot zone approximating 1,985-1,990 deg. F. It is essential with this particular clay to have absolute control of the temperature, since the tendency towards sticking is great when the heat is somewhat higher than the above mentioned temperature.

Find Best Equipment Cheapest

To regulate the kiln and control temperatures, fans, draft gages and pyrometers are employed. The kiln is equipped with



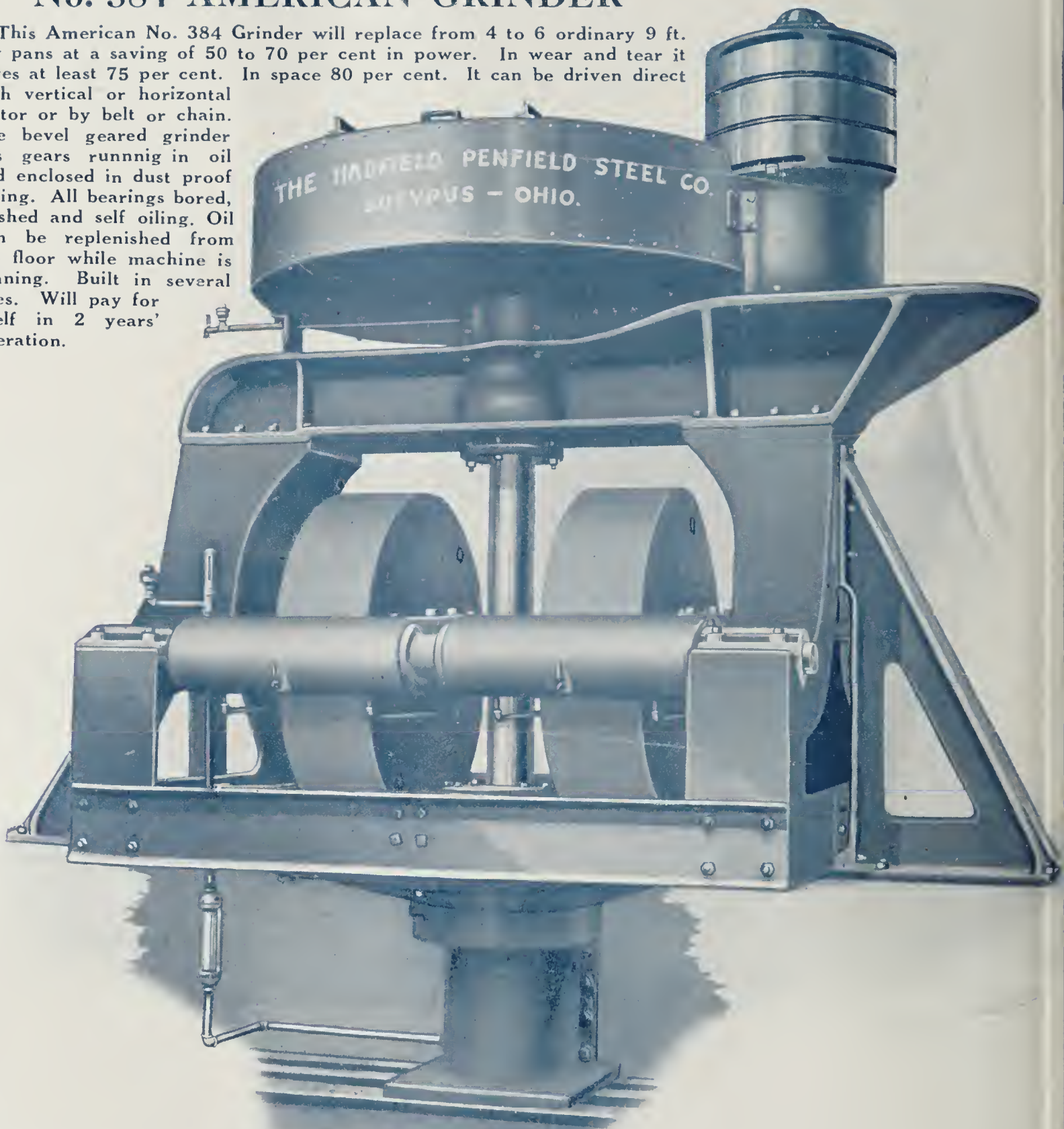
How American Machinery Helped Re

Some Bradford Success Features

Here are some of the important Units which have made the Bradford plant a success. What they have done for Bradford they will do for you. Particulars on any of these machines on request. They will help reduce the cost of building and increase your profits.

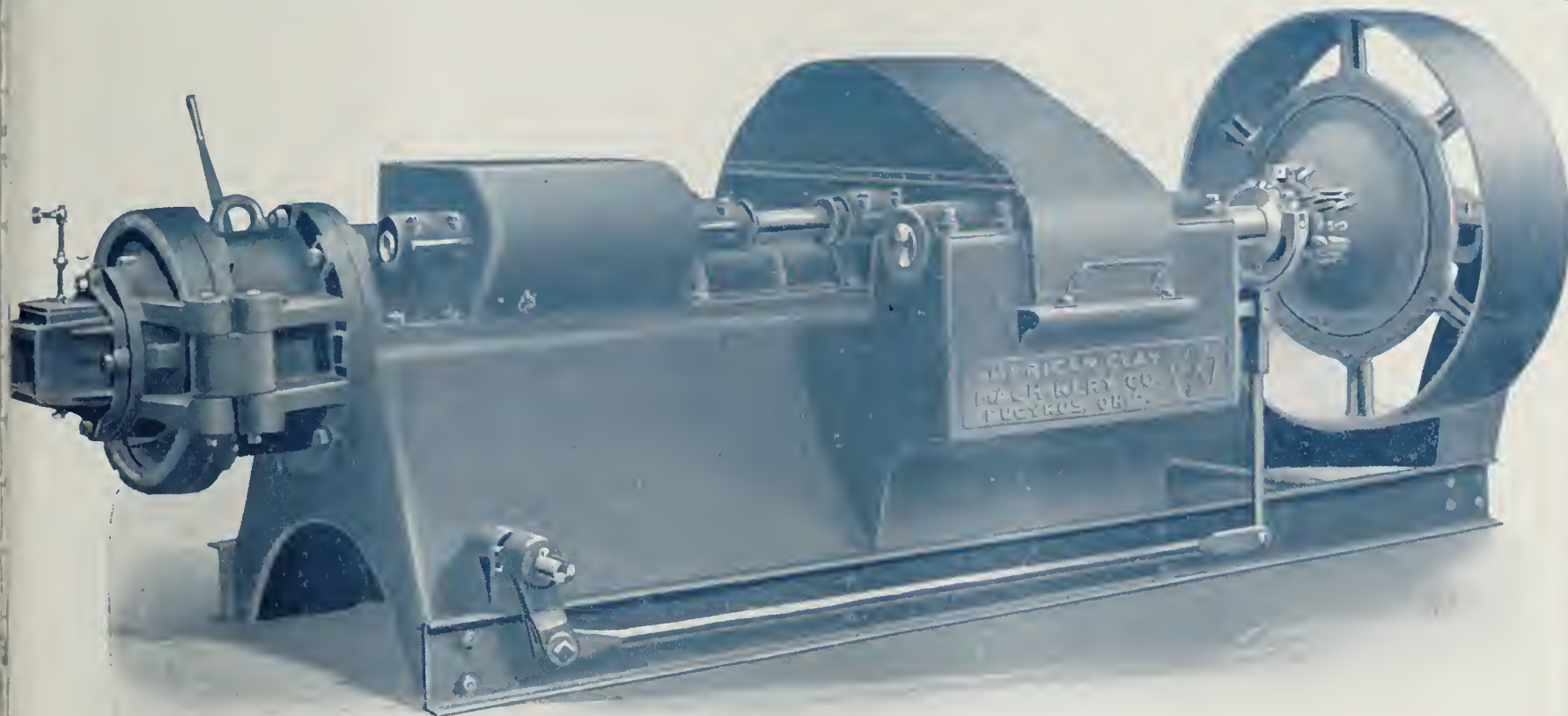
No. 384 AMERICAN GRINDER

This American No. 384 Grinder will replace from 4 to 6 ordinary 9 ft. dry pans at a saving of 50 to 70 per cent in power. In wear and tear it saves at least 75 per cent. In space 80 per cent. It can be driven direct with vertical or horizontal motor or by belt or chain. The bevel geared grinder has gears running in oil and enclosed in dust proof casing. All bearings bored, bushed and self oiling. Oil can be replenished from the floor while machine is running. Built in several sizes. Will pay for itself in 2 years' operation.





e Bradford Brick and Tile Co. Costs



AMERICAN No. 290 AUGER MACHINE

The American No. 290 Auger Machine has set the pace in Clay Working Machinery. There are some imitations but no equals. Efficient in operation. Durable in construction. Upkeep cost very low. Production very high. Built in several sizes.

AMERICAN No. 302 PUG MILL

A modern designed and modern built machine. Economical in power. Low upkeep, efficient. Thorough and fast in preparation of clay for the Auger machine. Can refer to numerous users.

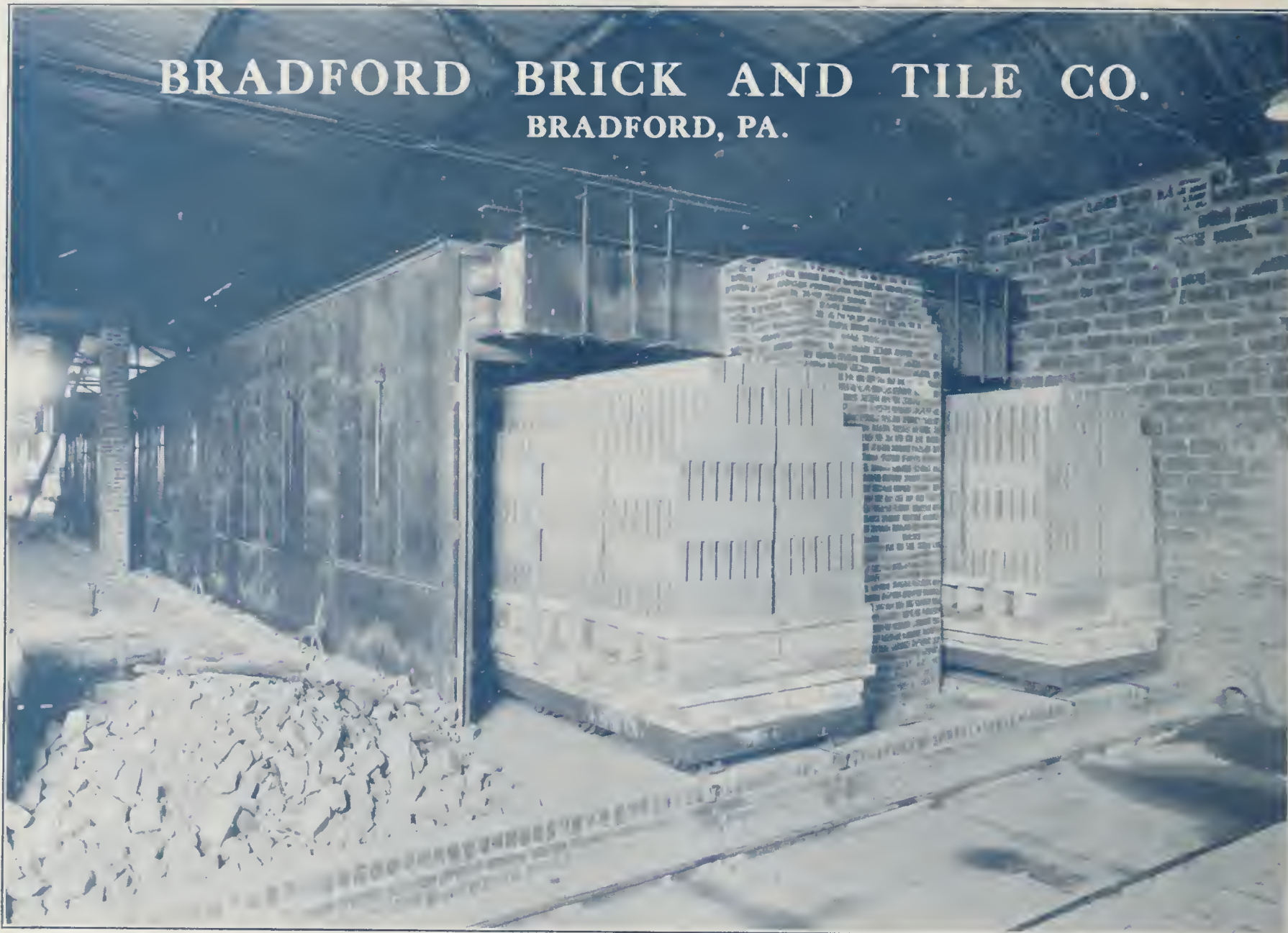
THE HADFIELD-PENFIELD STEEL COMPANY, BUCYRUS, OHIO



American No. 302 Pug Mill



BRADFORD BRICK AND TILE CO. BRADFORD, PA.



THE Bradford Brick and Tile Co. is enthusiastic about the success of the "Proctor" Continuous Tunnel Dryer.

This dryer, in conjunction with an American Dressler Tunnel Kiln, has so efficiently combined drying with firing, that these operations in the "Bradford" plant are now one continuous mechanical process. Even the same cars are used—being loaded with the new-made brick, automatically run through the dryer, and then through the kiln without disturbing the load. Great savings of time, space and labor over former methods have been made.

Heat for the dryer is obtained from the kiln—by a remarkable, new and unique system. The full economy of utilizing waste heat is realized, but the objectionable and damaging effects of combustion gases are eliminated.

This "Proctor" Dryer has played a notable part in the extreme reduction of cost made by the Bradford Brick & Tile Co. We will gladly explain its every advantage to you.

PROCTOR & SCHWARTZ, Inc.
PHILADELPHIA, PA.

Branch Offices:
PITTSBURGH—CHICAGO—NEW YORK—PROVIDENCE



indicating and recording pyrometers. Base metal couples are located at various points inside of the muffles. In this way the pyrometer enables the kiln operator to gain complete control of the kiln. Of course the draft gage is supplementary, and a slight variation causes a great change in kiln conditions.

To maintain the draft, supply the air for combustion, furnish air for cooling, transfer hot gases and air to the dryer and draw off the hot gases, fans are necessary. Their importance is considerable, and in choosing the fans for this

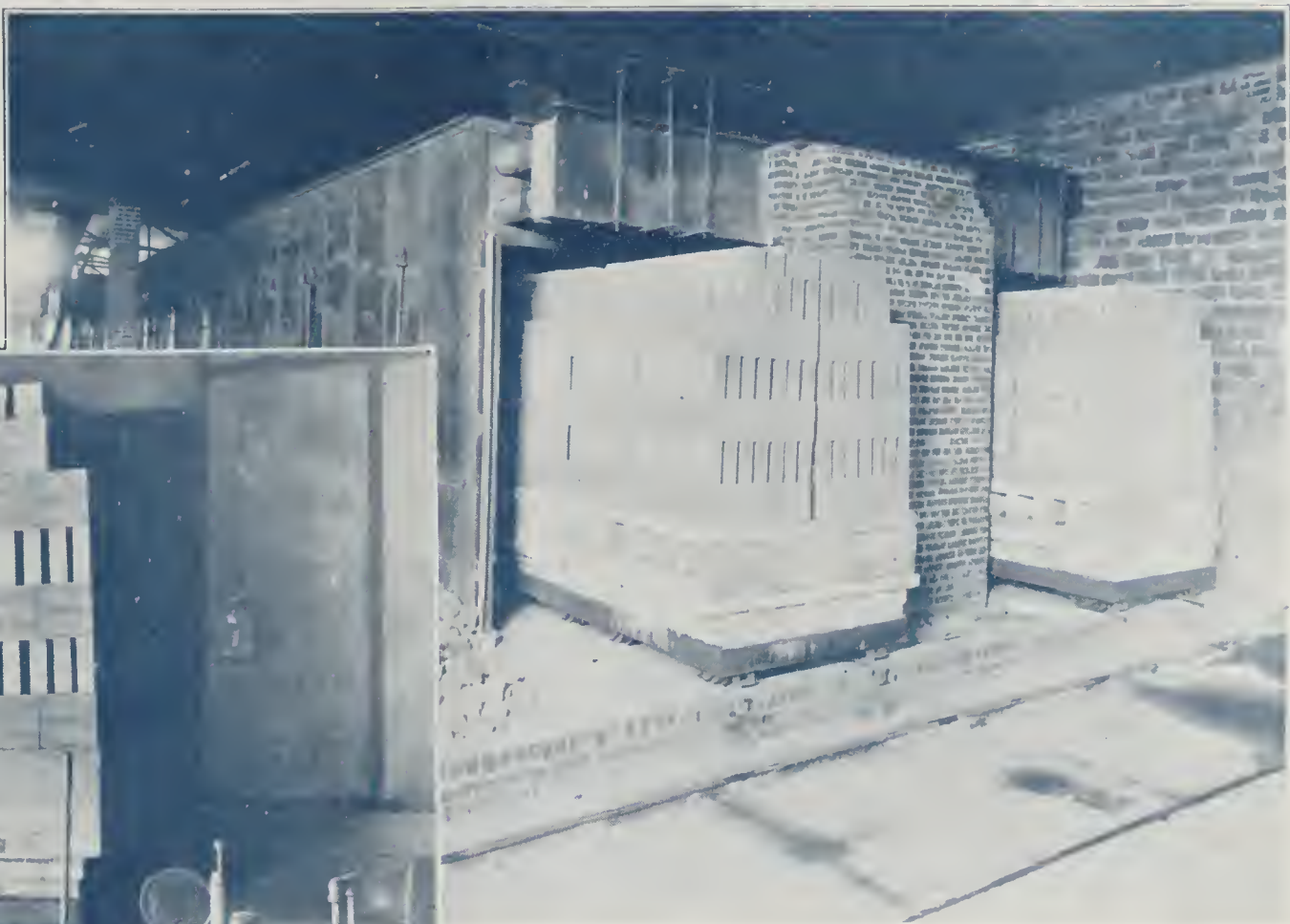
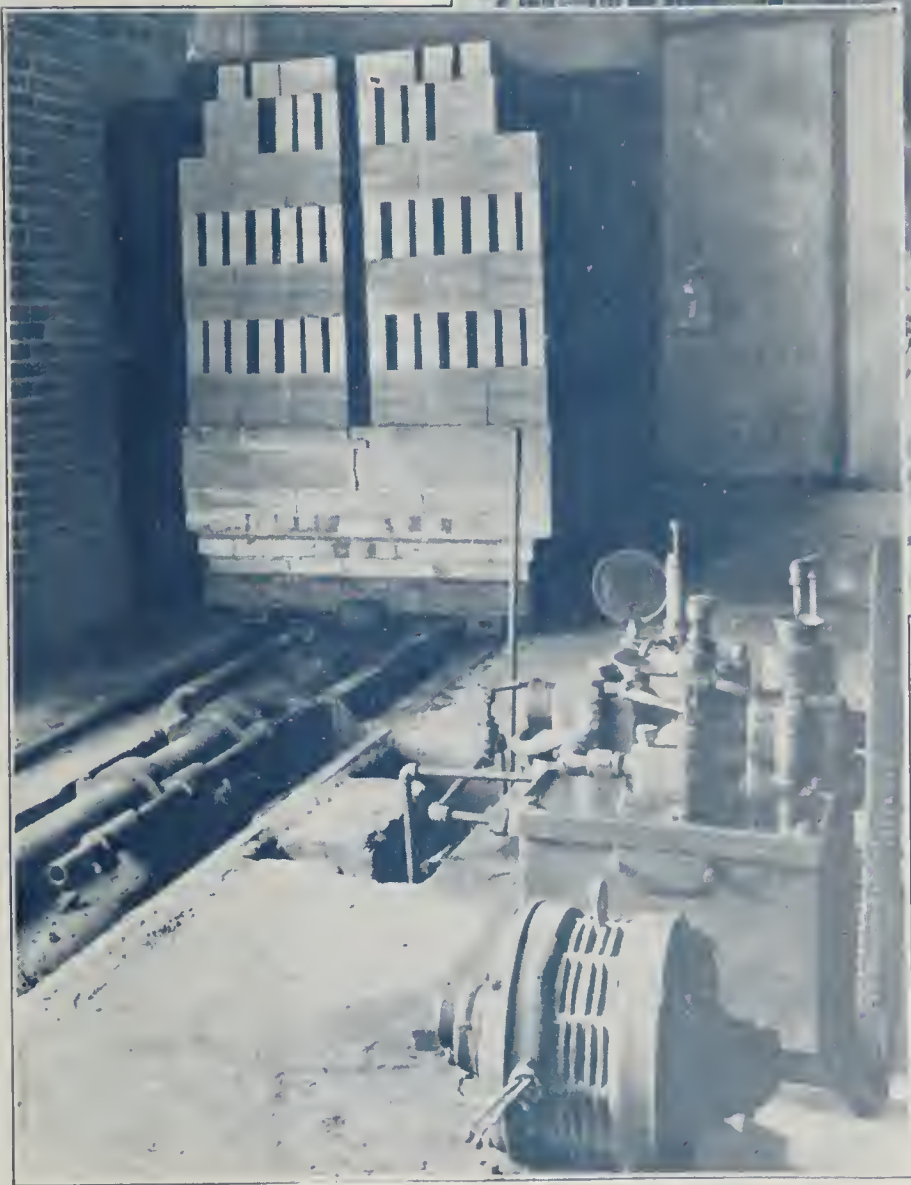
special designed single inlet fans of the steel plate type were selected for these two units.

The kiln truck cooling system is served by a radial flow type, single inlet fan. The unit is required to handle 5,000 c. f. m. of air at 300 deg. F. against 3 inches static pressure.

The double bearings on the fans are water cooled.

A 50 per cent. greater investment was required in these fans than would have been necessary for ordinary type. However, this expenditure has been found well worth while on account

On the Right Is Shown Exit End of Dryer. Iron Pipes on Top Carry the Waste Heat Gases. Below is Oil Pump Which Operates Propeller That Gradually Pushes Car Thru Dryer.



of their importance in the continuous operation of the kilns and dryers.

Propose to Install Automatic Gas Producers

The natural gas for the kilns passes thru gas regulators and meters. The burners on the tunnel kiln were designed by the Bradford Brick & Tile Co., while those used on the periodic kilns are of special manufacture. Approximately 160,000 cubic feet of gas are used each day on the tunnel kiln, during which 34,000 brick pass thru the kiln. This, it is claimed, is a saving of 60 per cent. in fuel requirement, which is aside from the other advantages of the tunnel kiln, such as labor saving and a higher per cent. of No. 1 ware. Natural gas costs 35 cents per thousand feet.

Due to the scarcity of natural gas, preparations are being made to install gas producers. Altho nothing has been done in this direction as yet, it is planned to install gas producers of the mechanical type. The stoking, feeding, ash handling and so forth is automatic, and the operation requires but one man's attention. The producer in mind is a type used largely in the steel industry, and it is felt that if the steel industry can find it profitable and efficient, the same equipment should be equally beneficial for clay products use. Two of these types of producers will probably be necessary for two tunnel kilns.

Special Features of Kiln Cars

As for the equipment and accessories on a tunnel kiln, it is conceded by users of tunnel kilns and by others familiar with the operation, that great care must be taken in the building of the kiln cars. As is well known, steel expands when heated.

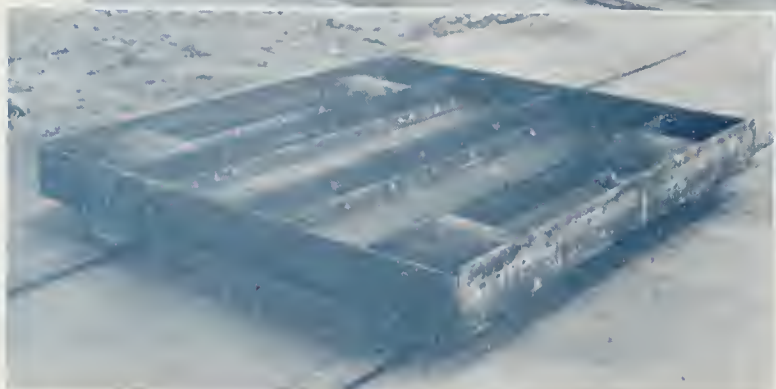
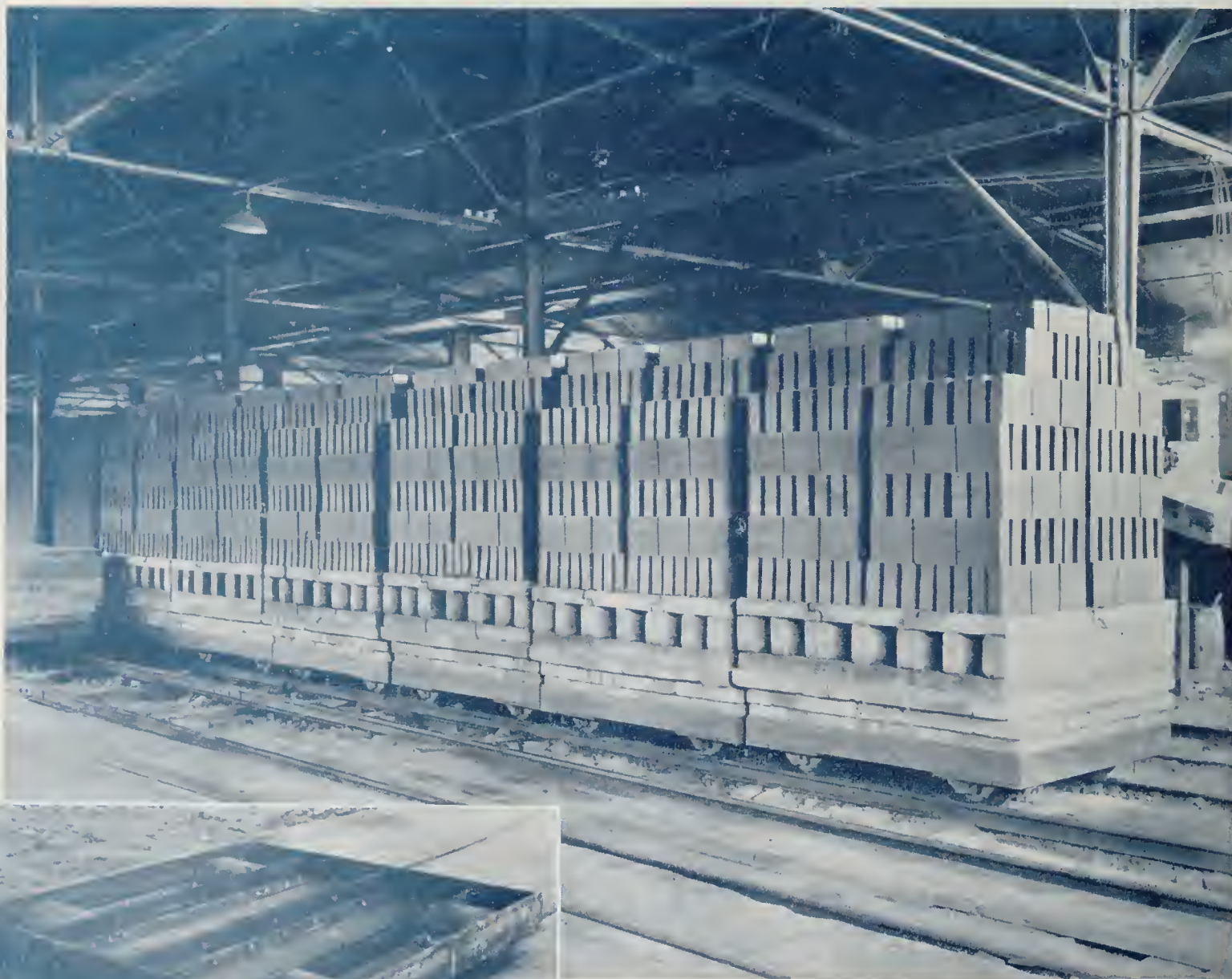
particular kiln the Bradford Brick & Tile Co. decided to pay considerably more money than required for ordinary fans on the market in order to get the highest grade equipment.

Three fans are included in this installation. Each fan is direct connected thru a flexible coupling to a variable speed alternating current motor. Each unit includes a cast iron base plate for supporting the two fan bearings.

The fans for the products of combustion and for the hot air exhaust are identical in size and design, and each specified to handle 30,000 c. f. m. of gas or air at a temperature of 800 deg. F. against 3 in. static pressure.

One of these fans also serves the dryer, the discharge from the fan being diluted with cold air as required to maintain the proper temperature in the drying room. On account of the character of the gases and the high temperatures prevailing spe-

How Bovaird and Seyfang Cars Helped Reduce Bradford B. & T. Co. Costs



Dependable and Durable Cars are Needed for the Hot Zone in Tunnel Kilns at the Bradford Brick and Tile Co. Plant.

Bovaird and Seyfang Dressler Tunnel Kiln Cars have proven their ability to stand the grief at this progressive plant. Each car is made with bearings and axles of the car wheels exact size. They run freely at all times from one part of the kiln to the other.

Read what Mr. W. L. Hanley, Jr., General Manager of the Bradford Plant has to say—

The letter speaks for itself.

"We wish to advise that the 150 tunnel kiln cars are giving us excellent service. There was not a rejection in all the cars sent us and the Dressler Engineers have congratulated us on the ease with which they roll. We are satisfied that these results could only be satisfactorily achieved by the method you originated of milling in your large milling machine the angle brackets that support the axles after the car was assembled. This method along with the high quality workmanship on the rest of the car, speaks for itself in the way the cars handle."

Write us today and we will explain in detail just what Bovaird and Seyfang cars can do for you.

BOVAIRD & SEYFANG MFG. CO.
BRADFORD, PA.



Setting Brick In Rectangular Periodic Kiln According to Old Process of Burning Dry Press Brick.

Thus when the kiln car passes thru the tunnel kiln and thru the hot zone, it naturally is heated above normal temperature, with the results that its bearings and wheels are affected. This phenomenon has been a source of trouble on some tunnel kilns, and has caused wheels to lock and the cars to jam in the kiln. In such cases the cars were required to be slid thru, which, of course, required enormous force and interfered with the proper progress of the kiln. In the case of the cars used at the Bradford plant, the manufacturer took special pains in constructing the axles and bearings, with the result that difficulty of the above nature has been eliminated.

A unique safety device on each end of the kiln, operated electrically, works so that a car cannot be placed in the kiln without one first being taken out. This eliminates danger of jams or of pushing a car thru the kiln door, and is a meritable device.

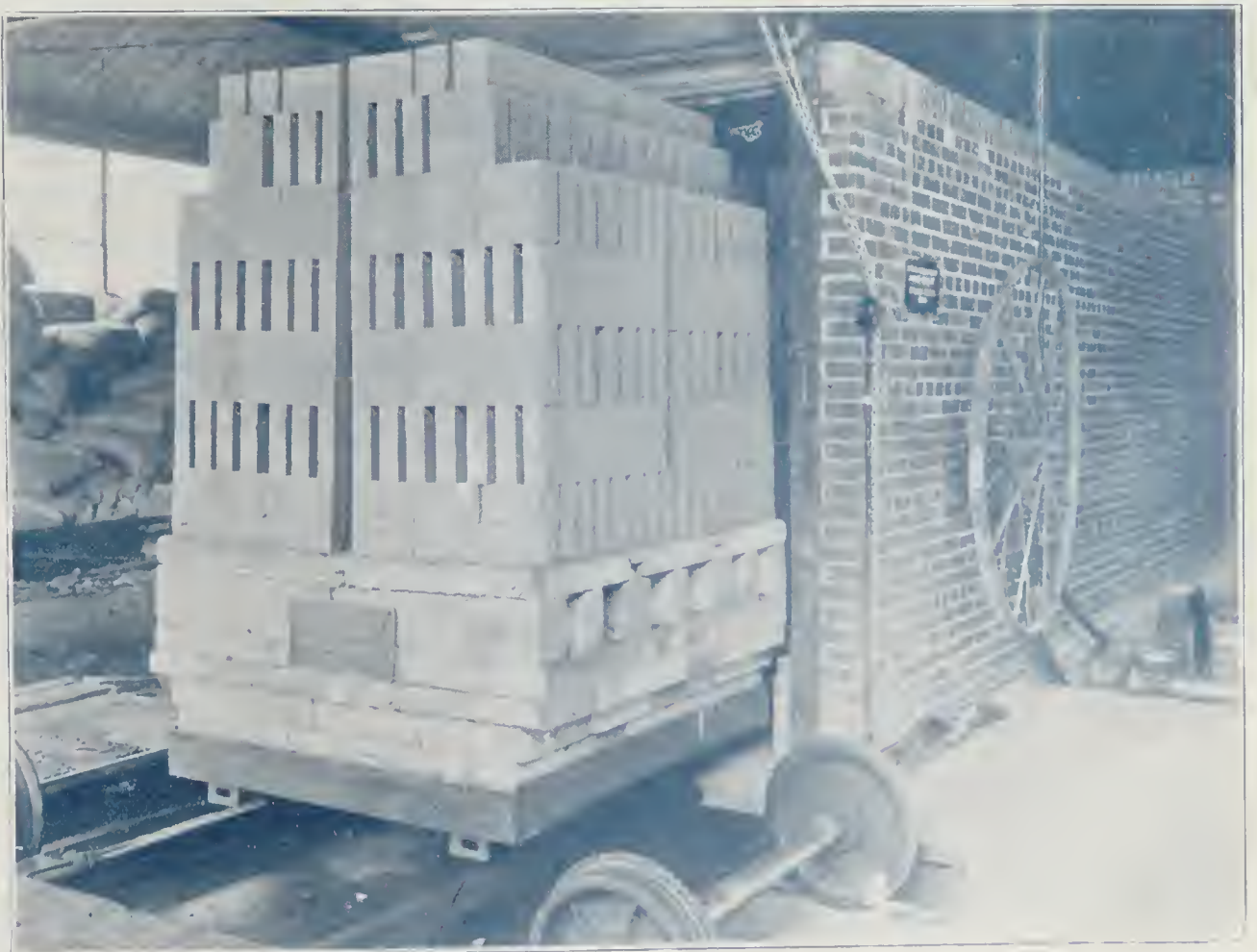
Insulation Reduces Temperature 1,830 Degrees

It is interesting to note, in connection with the kiln construction, the reduction of radiation loss. At a point where the temperature in the kiln is 1,980 deg. F., just beneath the crown, it is 1,450 on the exterior surface of the nine-inch fire brick arch. However, in the zone where the arch or kiln crown is covered with nine inches of insulation powder, the temperature on the outside surface has been reduced to 150 deg. F. This is an excellent practical demonstration of the splendid saving accomplished by the use of insulation material. Radiation losses in periodic kilns are estimated to be about 25 to 40 per

cent. of the total fuel consumed. It is apparent that a good part of the great saving due to tunnel kiln use is traceable to the insulation material.

An electrical transfer car transfers the finished cars of brick to the unloading station, where the brick are sorted and placed on spring body carts. Temporarily some 75 of these carts are in use in the various plants. Plans, however, are being perfected for an electrical monorail hoist system for handling the burned brick.

Storage battery trucks are also used in the distribution of brick and tile at the various factories, four of them being employed for such purposes. One of the greatest advantages of



Car Which Has Just Been Released From Dryer About to Enter Tunnel Kiln. Contrast This With Old Method of Operation.

Dressler Kilns Helped Reduce



IT TAKES A DRESSLER TO

Dressler Tunnel Kilns are being used for the burn-

1. Common Brick
2. Hollow Building Tile
3. Drain Tile
4. Face Brick
5. Floor Tile
6. Biscuit Floor and Wall Tile
7. Glost Floor and Wall Tile
8. Terra Cotta
9. Stoneware
10. Abrasives
11. Large Refractory Blocks
12. Spark Plugs

Our engineers have recently completed plans and delivered to

(1) Paving Brick (2) Enameling Iron Ware

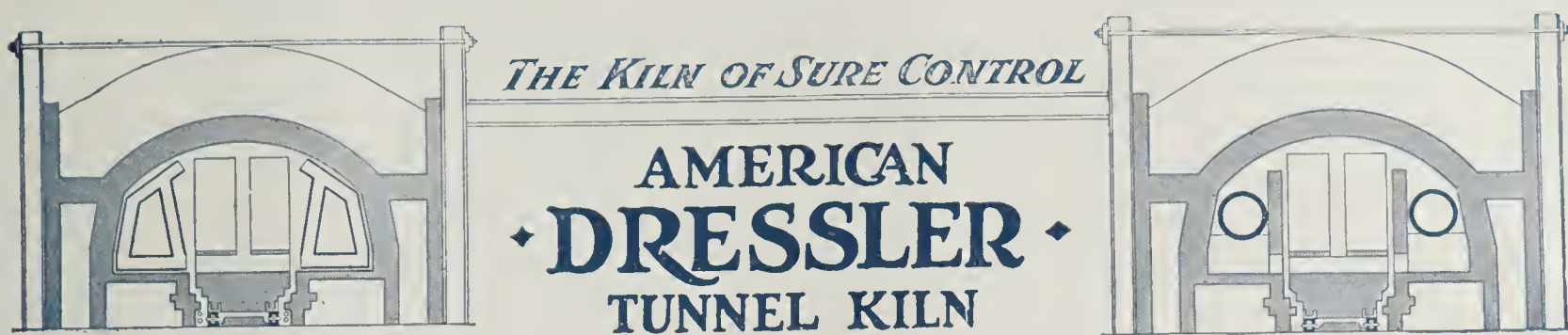
We are heat engineers. We can save you Fuel,

DRESSLER RAILWAY TUNNEL KILNS ARE THE ONLY ONES IN EXISTENCE

American Dressler

1740 East Twelfth Street

Bradford B. & T. Co. Costs



BURN 100 TONS DAILY

ing and heat treating of the following products:

13. High Tension Insulators
14. Biscuit Earthenware
15. Glost Earthenware
16. Decorating Earthenware
17. Art Pottery
18. Glass Melting Pots
19. Biscuit Sanitary Ware
20. Glost Sanitary Ware
21. Electrical Porcelains
22. Annealing Sheet Plate
23. Annealing Sheet Steel
24. Annealing Malleable Castings

customers plans for kilns to take care of the following products:

- (3) Glass Annealing (4) Fire Brick

Labor, Time and Quality in burning your product

THAT ARE BURNING LARGE TONNAGES OF COARSE CLAY PRODUCTS DAILY

Tunnel Kilns, Inc.

CLEVELAND, OHIO

How Sil-O-Cel Helped Reduce Bradford B. & T. Co. Costs



SIL-O-CEL

PREVENTS HEAT PENETRATION

TRADE MARK REGISTERED U.S. PATENT OFFICE

Insulation Saves 1350° Heat on the Bradford Plant Kilns

Before insulation kiln temperature registered 1980° on the inside and 1450° on the outside of the 9-in. arch—a radiation loss of from 25 to 40 per cent. With a 9-in. layer of SIL-O-CEL over the arch, the outside temperature was reduced to 100°.

Bulletin B-5A

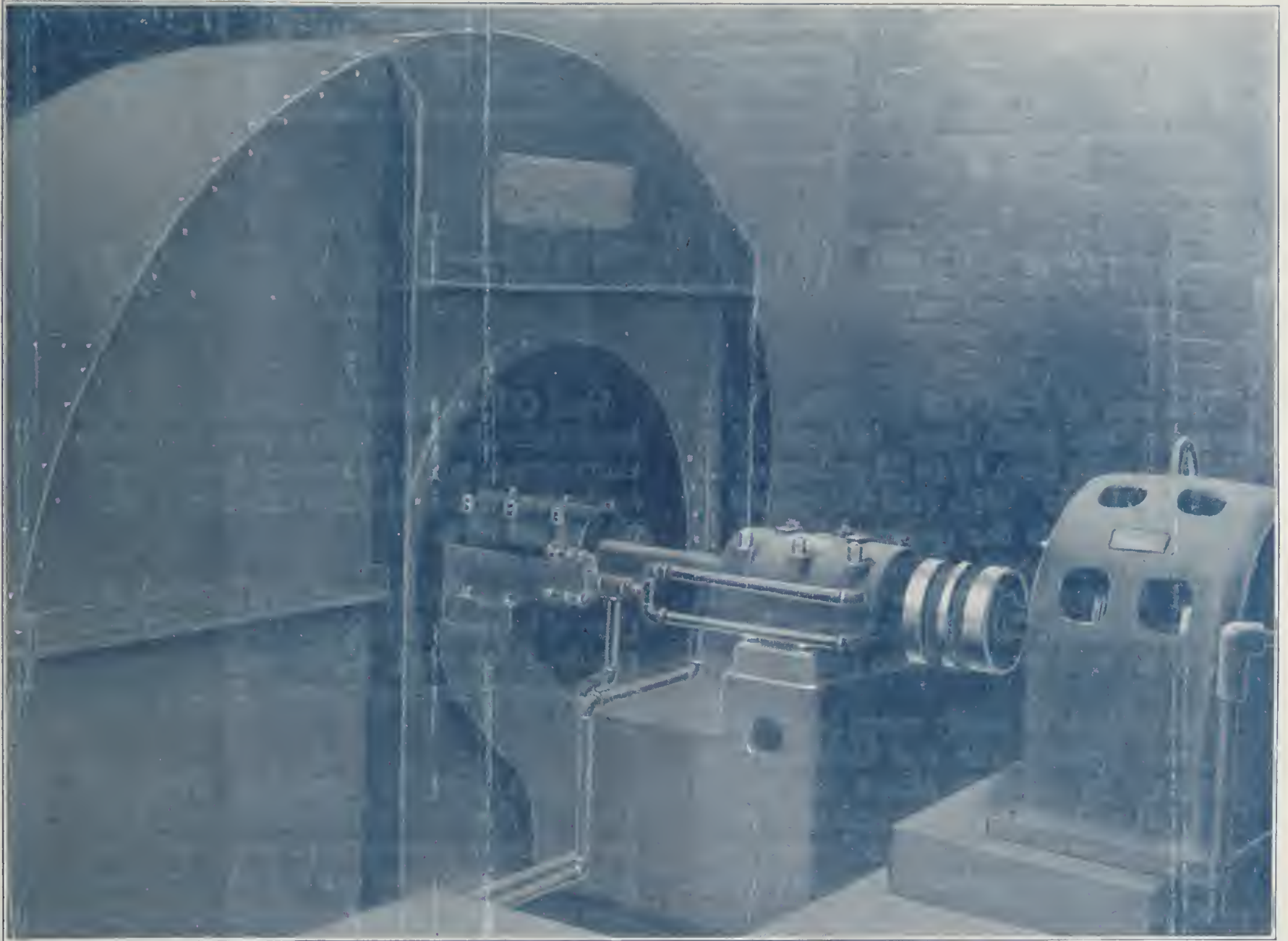
gives complete information

Address Nearest Office

Whether you are repairing, rebuilding or constructing kilns of any type—AN INSULATED KILN IS A PROFITABLE INVESTMENT.

CELITE PRODUCTS COMPANY

NEW YORK - 11 BROADWAY DETROIT - BOOK BUILDING DENVER - SYMES BUILDING
PHILADELPHIA - LIBERTY BLDG CHICAGO - MONADNOCK BLDG LOS ANGELES - VAN NUYS BLDG
CLEVELAND - GUARDIAN BLDG ST. LOUIS - RAILWAY EXCHANGE BLDG SAN FRANCISCO - MONADNOCK BLDG
NEW ORLEANS - WHITNEY CENTRAL BANK BUILDING



One of the Fans Which Conveys the Heat From the Kiln to the Dryer, Operated by Electric Motor Connected by Flexible Coupling.

these storage battery trucks during the period of reconstruction was their use in the movement and placing of heavy equipment, motors, machinery, and so forth.

Power Plant of High Calibre

One of the features of this factory is its splendid power plant, which was designed and built by the Bradford Brick & Tile Co. Three vertical gas engines, each of three cylinder type and developing a total of 900 horsepower, develop the energy for operating the various equipment in the factory. Each engine is direct connected to a 250 K.V.A., 440 volt three phase cycle generator. An unusually high efficiency, considering the transference of the thermal heat into electrical energy, is obtainable in this power plant. The thermal efficiency measured from the heat in the gas to the electrical energy on the switchboard is 28 per cent. A Tyrrel regulator is used for voltage regulation which is very important where using large motors such as are on the auger machine, and where the starting torque is enormous. The switchboard is complete in every detail, and the operation of the power plant simplified. One man takes charge of the power plant and does repair work in addition. Located in the power house is a drill press, work bench and miscellaneous machine shop equipment.

Standardize Equipment

The plant is standardized as much as possible as to shafting, bearings, horsepower of motors, and so forth. An extra motor of each size is kept on hand so that it may be substituted in case of necessity for a motor out of repair, thus minimizing any time lost due to motor trouble. Ring oil bearings are used in almost every instance on the plant, and these are found to be of much greater satisfaction than babbitt bearings. They

also have a well equipped repair shop, including shaper, lathe, drill press, automatic hack saw and threading machine, as well as acetylene torch and electric hand drill.

In the clay plant there is always a considerable quantity of oil used for various bearings, transmission, motors, machinery and for the clay column in case of stiff mud brick manufacture. Three rectangular prism-shaped galvanized iron tanks store all the oil required for the various machines, and they are equipped with pumps which enables dispensing of the oil with facility.

Fire Protection Provided

Six hydrants for fire protection and sufficient hose forms part of the equipment on this plant. By damming up a reservoir on a hill into which spring water flows, an ample supply of good water is had. This reservoir supplies water from the steam shovels and is also available for fire protection.

Even in the matter of spotting freight cars before kilns or in the stock shed, mechanical devices are employed. To facilitate the placing of cars, a mechanical car puller is used. It has been found very handy in the plant.

In the construction of the plant, which required some 80 to 90 tons of fabricated steel for the power house, main manufacturing building, conveyor supports, and so forth, not a single day was lost in manufacturing operations. The plans were carefully drawn and the transformation of the old, obsolete plant into a new modern plant was executed smoothly, and, of course, with a saving in cost.

The electrical work was done by a young man who is an expert mechanic. All the wiring is placed in underground, waterproof cables, located about six inches under the flooring, and this method of construction eliminated the use of conduits,

Wayne Tanks Helped Reduce Bradford B. & T. Co. Costs

Fire Your Kilns With Fuel Oil—The Wayne Way

The use of Fuel Oil for firing kilns means a "top notch burn" in from 72 to 96 hours with from 18 to 20 gallons of oil per 1,000 brick. With Fuel Oil quoted at about five cents the gallon delivered to your yard, the cost of burning with oil would be approximately 90c for each thousand brick, which compares favorably with coal even on bare fuel basis.

But what is of really more importance is Lower Labor Costs, and Uniform Production. In ordinary plants the use of Fuel Oil will reduce the number of men employed in the ratio of 7 to 2—one man alone being required to operate an 18 kiln plant at night.

With oil, the percentage of No. 1 Ware, its quality and the speed at which the kilns are turned over is overwhelmingly in favor of this fuel. In addition, there is no manual handling of fuel, no removal of ashes, no dust, and no soot.

Fuel Oil possesses the possibilities of a long flame, being superior even to gas in this respect, while its intense heat is especially desirable in the Salt Glazing of brick or hollow ware.

After the "water-smoking" period the time of burning is reduced to one-half that required for coal, while burning stages and temperatures are more readily controlled.

Wayne supplies complete Fuel Oil Burning Systems which are installed under a definite guarantee to produce the results for which they are intended, and we thus assume the sole responsibility for the efficient operation of our equipment. Fuel Oil is economical, dependable and abundant, in fact, the ideal fuel for kilns.

Write today for descriptive bulletin 2500BCR and avail yourself of our engineering service which is yours without charge or obligation.

WAYNE OIL TANK & PUMP CO., 769 Canal St., Ft. Wayne, Ind.

San Francisco Office: 631-633 Howard Street

Canadian Tank & Pump Co., Limited, Toronto, Ont.

A national organization with offices in thirty-four American cities.

REG U S
Wayne
TRADE MARK

OIL CONSERVATION SYSTEMS

Gasoline and Oil
Storage Systems

Heavy Metal
Storage Tanks

Oil Filtration
Systems

Oil Burning
Systems

Furnaces for Metal Melting,
Forging and Heat Treating

insulators, and so forth, resulting in a great saving in cost with no minimization of safety.

Reduce Cost Seven Dollars Per M.

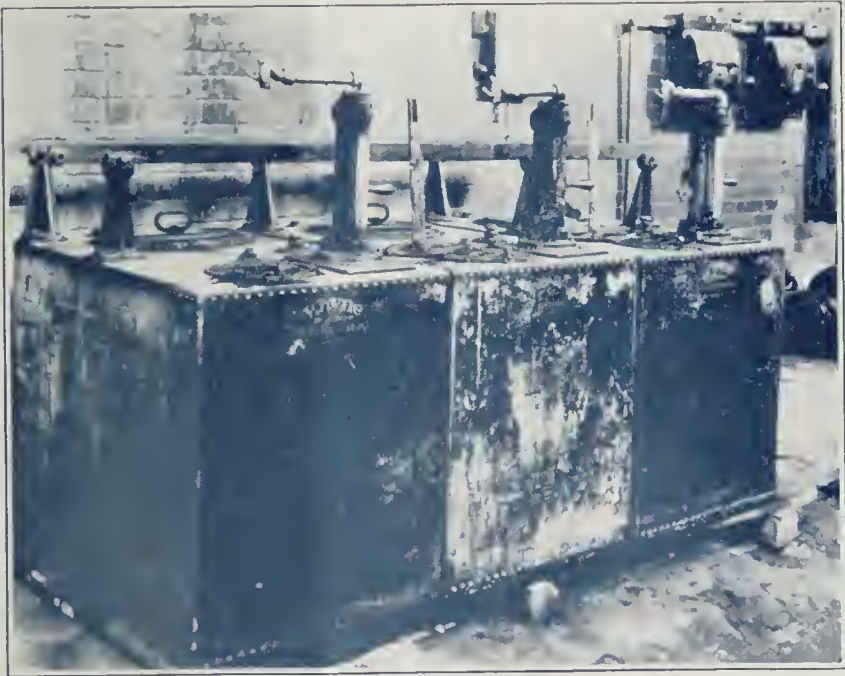
To summarize some of the accomplishments as a result of the reconstruction work that has been done on this plant, it is interesting to note that before work was commenced the capacity of the Bradford Brick & Tile Co.'s three plants was 1,800 tons of tile per month and 1,600,000 brick. This capacity has been increased to 2,400 tons of tile per month on the No. 1 plant, 2,000,000 brick per month on the No. 3 plant, and to 3,000 tons plus 1,200,000 brick on the new unit, or No. 2 plant.

An order which formerly required a whole month to fill can now be shipped in 3½ days from the time received. Thus the improved methods have reduced the investment in the material in process of manufacture to one-seventh that of the old methods.

The labor for the three plants has been cut from 170 to 105, or practically one-third less. The fuel requirement is practically the same for the increased production that it was formerly, which is very important when business is rushing and shortage of both fuel and labor is experienced. The equipment is at hand when business does come and there is no dependence upon manual help.

Pay Back Investment in 3½ Years

On the basis of 24,000,000 brick per year, the production cost has been reduced seven dollars per thousand from the pit to the shipping platform. The cost of producing tile, on the basis of 24,000 tons per year, has been reduced \$1.50 per ton. Besides this the total production capacity has been increased approximately 50 per cent. and this will be realized on the completed program which will take perhaps another year to finish.



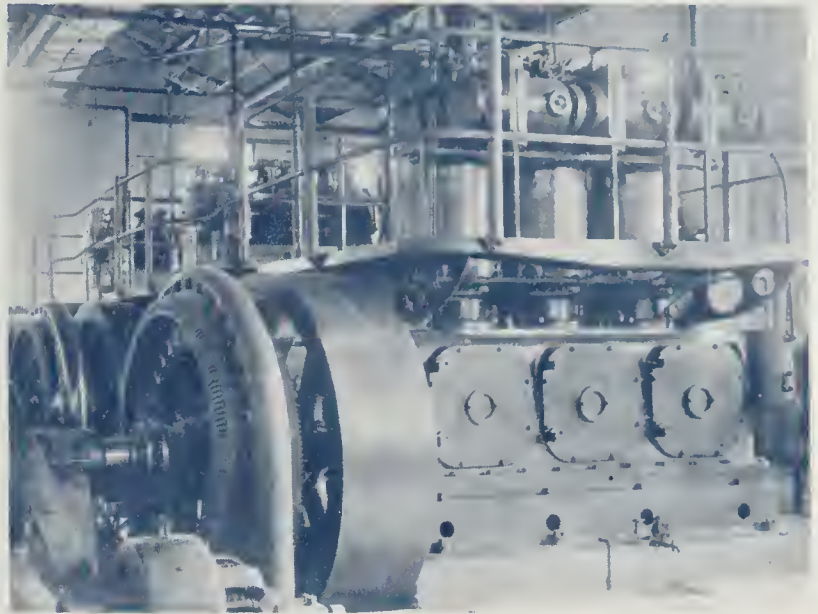
Tanks Used for the Storage of Oil and Which Facilitate the Dispensing of Oil for the Various Clay Machinery.

Many manufacturers who have read this far will say to themselves, "This is fine, but it costs a lot of money to do this, and it is a question whether or not the expenditure is worthwhile." This doubt is answered quickly. Mr. Hanley has estimated that there is not a single improvement which will not pay back its investment inside of 3½ years. Most of the investments will pay back the principal with interest at a much shorter lapse of time. 3½ years is an unusually short time for the absorption of this investment. Even if it took ten years, most bankers would consider it a profitable undertaking.

Moral

Mr. Hanley believes that unless the manufacturing end of a clay plant is efficient and able to give proper service, it is futile

How Rathbun Gas Engines Helped Reduce Bradford B. & T. Co. Costs



AND SO THEY SELECTED RATHBUN GAS ENGINES—

Illustrated above is the engine room of one of the most notable brick plants in America—**BRADFORD BRICK AND TILE COMPANY**—in which are installed

3 Rathbun Gas Engines

The selection of these well-known and most used engines for plants where continuous service is demanded, is due, more than anything else to their demonstrated work; they meet the requirements of the plant with economy and reliability.

This make of engine has been on the market for nearly twenty years, and the many advantages of its design and construction have won for it an unimpeachable reputation among manufacturers both large and small.

These engines are built with 2, 3 and 4 cylinders, and in some cases for particular purposes with six and eight cylinders. They operate on natural, producer, illuminating or bi-product gases—quiet, economical, reliable.

Send today for our latest catalog.

Rathbun-Jones Engineering Co.
Toledo, Ohio



A Comprehensive View of the Power Plant Showing the Three Units, Each Composed of a Three-Cylinder Gas Engine and Dynamo.

to spend much time bolstering up the distribution and selling end. A factory that could produce quality as well as quantity, and guarantee both, is an excellent backing for the sales department. It is for this reason that Mr. Hanley has devoted nearly all of his time to the manufacturing end of his business in the past, altho he is now considering the distribution phase of the business.

That their idea is a good one is shown by a recent ex-

perience he had with a prospective customer, who offered him a bond guaranteeing that he would sell 1,500,000 brick per month if given the agency in his city. This man had been thru the plant and was impressed with its construction and enthused, because he knew that he would have guaranteed quality and quantity behind him, which would enable him to give good service, which is necessary now more than ever in the sale of any commodity.

FIRMS SUPPLYING PRINCIPAL EQUIPMENT ON BRADFORD B. & T. CO. PLANT

Belting, Canvas	MAIN BELTING CO., PHILADELPHIA, PA.
Belting, Leather	GRATON & KNIGHT CO., WORCESTER, MASS.
Belting, Rubber	BOSTON WOVEN HOSE & RUBBER CO., BOSTON, MASS.
Burners, Gas	N. C. DAVISON, PITTSBURGH, PA.
Car, Quarry	WESTERN WHEELED SCRAPER CO., AURORA, ILL.
Cars, Haulage	WATT MINING CAR WHEEL CO., BARNESVILLE, OHIO.
Cars, Tunnel Kiln	BOVAIRD & SEYFANG MFG. CO., BRADFORD, PA.
Car Puller	STEPHENS-ADAMSON MFG. CO., AURORA, ILL.
Car Pusher, Kiln	HILL-CLUTCH CO., CLEVELAND, OHIO.
Carts, Loading	LANCASTER IRON WORKS, LANCASTER, PA.
Clay Machinery, General.....	HADFIELD-PENFIELD STEEL CO., BUCYRUS, OHIO.
Conveyor Rollers	STEPHENS-ADAMSON MFG. CO., AURORA, ILL.
Conveyor Rollers	MAIN BELTING CO., PHILADELPHIA, PA.
Couplings, Flexible	THOMAS FLEXIBLE COUPLING CO., DUNKIRK, N. Y.
Crusher, Preliminary Clay.....	MANUFACTURERS EQUIPMENT CO., DAYTON, OHIO.
Cutter	E. M. FREESE & CO., GALION, OHIO.
Cutter	CHAMBERS BROTHERS CO., PHILADELPHIA, PA.
Dry Pans	HADFIELD-PENFIELD STEEL CO., BUCYRUS, OHIO.
Dry Press Machines	CHISHOLM, BOYD & WHITE CO., CHICAGO, ILL.
Dryer	PROCTOR & SCHWARTZ, INC., PHILADELPHIA, PA.
Elevators, Bucket	JEFFREY MFG. CO., COLUMBUS, OHIO.
Engines, Gas	RATHBUN-JONES ENGINE CO., TOLEDO, OHIO.
Explosives	DU PONT POWDER CO., WILMINGTON, DEL.
Fans	GREEN FUEL ECONOMIZER CO., BEACON, N. Y.
Feeders, Apron	JEFFREY MFG. CO., COLUMBUS, OHIO.
Gas Regulators	CHAPLIN FULTON CO., PITTSBURGH, PA.
Gates, Metal	LAKEWOOD ENGINEERING CO., CLEVELAND, OHIO.
Generators, Electric	BURKE ELECTRIC CO., ERIE, PA.
Insulation Material	CELITE PRODUCTS CO., CHICAGO, ILL.
Kiln	AMERICAN DRESSLER TUNNEL KILNS, INC., CLEVELAND.
Locomotive, Electric	GOODMAN MFG. CO., CHICAGO, ILL.
Locomotive, Gasoline	THE FATE-ROOT-HEATH CO., PLYMOUTH, OHIO.
Motors, Electric	BURKE ELECTRIC CO., ERIE, PA.
Motor, Electric	WESTINGHOUSE ELECTRIC & MFG. CO., PITTSBURGH, PA.
Pug-Mills	HADFIELD-PENFIELD STEEL CO., BUCYRUS, OHIO.
Pyrometers	BRISTOL CO., WATERBURY, CONN.
Screens	W. S. TYLER CO., CLEVELAND, OHIO.
Shovels, Steam	BALL ENGINE CO., ERIE, PA.
Steel, Fabricated	FERGUSON STEEL & IRON CO., BUFFALO, N. Y.
Steel, Fabricated	BANCROFT JONES CO., BUFFALO, N. Y.
Tanks, Galvanized Iron Oil.....	WAYNE OIL TANK & PUMP CO., FT. WAYNE, IND.
Transmission, Chain Drives.....	MORSE CHAIN CO., ITHACA, N. Y.
Trucks, Industrial	ELWELL-PARKER ELECTRIC CO., CLEVELAND, OHIO.

Gas Producers—Monorail—and so forth not selected as yet.

C. B. M. A. ADDS NEW MEMBERS

Added strength to the Common Brick Manufacturers Association of America, to a year of work that has resulted in remarkable growth during the period, is made during the last weeks of the year in enrolling more members. Latest to join the national body are the Long Beach (Cal.) Brick Co.; Fred Glecker, Oak Harbor, Ohio; Harper Clay Products Co. and the Seattle (Wash.) Brick & Tile Co. Of the national organizations identified with the construction industry, it is the belief of leaders in this particular association that it now stands well at the top toward 100 per cent. representation in its particular field.

**YEAR'S BUILDING TOTALS TWO AND ONE-HALF BILLION**

The latest report issued by the F. W. Dodge Co. states that building expenditures thruout the country will reach \$2,500,000,000 for this year. Contracts amounting to \$2,161,500,000 have been awarded in 27 northwestern states. Contemplated work for the last month calling for \$395,668,000—more than double the \$192,311,000 started under contract—indicates that the coming year will exceed this total.

Illinois, Indiana, Iowa, Michigan, Wisconsin, Missouri, Nebraska and eastern Kansas contracts for 1921 have reached \$599,229,000, which is two per cent. above the five year average. The total for November in these states, \$45,-

462,000, was three per cent. below last year, but there is a rush of contemplated work to the amount of \$150,700,000, of which 36 per cent. is for residential contracts.

**THE LYRIC OF THE BRICK**

By Charles A. Cooley

A brick to be of use, must be
Of quite a hard consistency;
And if perchance, one hits your head,
You're straightway dead, or sent to bed.

It is at first a bit of clay,
That's clogged the earth for many a day;
Until at the appointed time,
It's wrested from its bed of grime.

Then ground and pressed into a cake,
With thousands more it's set to bake,
In a great kiln, where hottest fires
Soon make it fit for men's desires.

So without brick, this world would be,
A costly place to live in—see,
For lumber then might be so high,
That folks would simply "up and die."

***Jersey Miners Hold Evening of Frolic***

THE New Jersey Clay Miners' and Manufacturers' Association of the Raritan River section of the state held its annual meeting at the Elks' Club, Perth Amboy, on Wednesday evening, December 14, with a fine attendance of members and guests from all parts of the district.

This event has come to be one of the real social, get-together affairs in Raritan River clay circles, and as was the case last year, all business was cast aside for the evening and just a good round of fellowship prevailed. All officers were re-elected for the coming year, these being L. H. McHose, president; F. R. Valentine, vice-president; August Staudt, treasurer; and M. M. McHose, secretary. The appointment of officers is arranged by the executive committee at a regular monthly gathering.

Following an enjoyable dinner, which spoke much to the credit of the entertainment committee, composed of Fred A. Whitaker and R. L. Clare, President McHose extended a brief greeting to those present. His topic was that of "good fellowship," direct and to the point.

Very Large Attendance

He mentioned the value of meeting together for those in the same line of industry in a fraternal spirit. Helping the other fellow to be happy, he said, brought equal happiness to one another, and goes to make business really worth while. What you get out of life is measured in a large way by what you do to help your co-workers and associates, and it is returned to you, bounty full, in the long run.

President McHose commented upon the representative attendance, totaling about 60, and said that this showed conclusively that the organization was a going, pulsating, functioning body. Its success has been marked and there are but few in the clay working industry in this section who have not added their names to the membership list.

The entertainment for the evening took the form of a

humorous address by "Senator" Edward Hastings of Wisconsin, who kept his audience in a laughing mood with a discourse directed to affairs of the nation in a lighter vein. Following, two vivacious young ladies gave a round of songs and then came the dancing. Charles A. Bloomfield, Abel Hansen and others well known in the industry in this district were selected as "targets" for some direct "attention" by the sprightly damsels, and they seemed to enjoy it as much as the audience.

Roster of the Meeting

L. H. McHose, McHose Clay Co., Perth Amboy; S. W. Hersey, Portland, Me.; J. G. Williams, Trenton; Frank R. Valentine, M. D. Valentine & Brother Co., Woodbridge; George H. Brown, Director of Ceramics, Rutgers College, New Brunswick; Abel Hansen, Fords Porcelain Works, Perth Amboy; O. R. Hatfield, secretary, Industrial Association of Perth Amboy; I. J. Reimers, Perth Amboy; Fred A. Whitaker, General Ceramics Co., Keasbey; F. F. Anness, Anness & Potter Clay Co., Woodbridge; John H. Miller, Highland Park, N. J.; R. L. Clare, Federal Terra Cotta Co., Woodbridge; Charles A. Bloomfield, Bloomfield Clay Co., Metuchen; Howard W. Bloomfield, Bloomfield Clay Co., Metuchen; Major A. W. Casc, Commandant, Raritan Arsenal, Metuchen; C. B. Carman, Metuchen; Hampton Cutter, Woodbridge; Roy E. Anderson, Woodbridge; Russell S. Whitehead, South River; R. H. Minton, General Ceramics Co., Metuchen; August Staudt, Perth Amboy Tile Works, Perth Amboy; C. H. Rasmussen, Perth Amboy Tile Works, Perth Amboy; John Pfeiffer, Henry Maurer & Son, Maurer; C. W. Hill, Atlantic Terra Cotta Co., Perth Amboy; L. E. Riddle, Jr., Edgar Brothers, Metuchen; H. G. Derwender, General Ceramics Co., Metuchen; Kenneth E. Ward, Newark; Malcolm M. McHose, McHose Clay Co., Perth Amboy; W. Guy Weaver, National Fireproofing Co., Woodbridge; Otto W. Will, Roessler & Hasslacher Chemical Co., Perth Amboy; Edward H. Koyen, Metuchen; F. B. Allen, Perth Amboy; V. L. Yipsen, Woodbridge; J. J. Livengood, Woodbridge; August Zeltman, Perth Amboy; William S. Wright, South River; Marcus S. Wright, clay miner, South River; C. Von Hartz, The Seaboard Refractories Co., South Amboy; C. M. Fisher, Sayre & Fisher, Sayreville; F. M. Crossman, The Crossman Co., South Amboy; M. E. Gray, The Seaboard Refractories Co., South Amboy; J. L. Williams, Edgar Brothers, New York; C. M. Rupp, Keyport; Ferdinand Hall, Perth Amboy; Thomas Layden, Perth Amboy; Henry Hansen, Ford Porcelain Works, Perth Amboy; Edward I. Levy, South River; O. C. Buchner, The Crossman Co., South Amboy; William Stephens, South Amboy; W. F. Campbell, Metuchen; LeRoy W. Allison, Newark; F. W. Schmidt, The Carborundum Co., Keasbey; Charles E. Bates, Perth Amboy; H. A. Miller, Fords, N. J.; J. H. Bloodgood, South Amboy.

FINE CERAMIC MANUFACTURE



A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

"AMERICAN VALUATION" IN NEW TARIFF.

PERHAPS NO CONTROVERSY of equal importance as the American Valuation Plan has witnessed so much adjective language, as that so applied, altho wholly and in instances admittedly, inapplicable to the precise legislation which will ultimately be enacted. One of its chief opponents frankly admitted to the speaker that they were directing their arguments against the rates of and a single provision of the Fordney bill as it passed the House, knowing full well the former entirely foreign to the discussion and the latter long since abandoned by unanimous joint action of the majority members of the Finance and Ways and Means Committees. By that authority it has been agreed and published that the American Valuation Plan would be based upon the wholesale market value in the principal markets of this country: (1) of like or similar American goods, or, (2) in the absence thereof, of such or similar imported goods, or (3) in the absence of all such, upon the foreign cost of production of like or similar imported goods.

Where Old and New Systems Differ

Now in what does the present system differ from the foregoing? Thereunder our import duties are assessed upon the wholesale market value in the principal markets of the particular country, whence exported, (1) of the imported article or in the absence of such market value, that of similar imported goods, for home consumption therein. (Please note not for export, which is the invoice, and, almost uniformly, a different market value), (2) or, in the absence of a market value for home consumption of such or similar imported goods, the cost of production thereof.

Of these respective systems it is declaimed with exhaustive adjective denunciation that the latter is the sane method of one hundred years, while the former is "theoretical, untried and impracticable." Any effort to assemble a fraction of other adjectives used would exhaust the limits of this presentation. Now what is there "theoretical" or "impracticable" in this proposed American system? Let us not lose sight of the real legislative systems, existing and proposed.

Real Issue Has Been Obscured

The only thing that possibly can affect the importers' interests under any system, are the duties to be paid and penalties for undervaluation. The amount of duties to be paid

as stated depends upon the rate established and in no wise, in the remotest degree, depends upon the basis of those duties. So, that element of the case is clearly excluded. Nevertheless, by sophistry and for the purpose of clouding and falsely representing the real issue we daily observe this ridiculously false claim asserted.

Typical of the arguments with which the country is being flooded is one before me of a certain college professor. Reading it carefully I count numerous misrepresentations of what is the declared purpose of the committees of Congress to write in the law. I dare say not one in a hundred of these critics have ever read intelligently the proposed law or know its several provisions affecting this plan of assessment. Obviously if they have they carefully concealed them and their import from the country. Each disputant sets up a bogymen the result of his immature ideas how the law would be enacted and fires a broadside at this creation. Candid, intelligent, patriotic discussion ought to be confined to the truth.

Object to Penalties for Undervaluation

Measured by this obvious rule of reason 90 per cent. of the fusillade against the American Valuation Plan is misrepresentation. The sole and only thing the basis of duties affects or effects is the penalties for undervaluation. And here lies the pinch. Here is the cause for this violent denunciation of the American plan. It is said first, that no importer can know at what value to enter his goods. What is to be known is the value in our markets (1) of like or similar American goods, (2) or if none such, of like or similar imported goods, (3) if none such, the cost of production abroad of the imported article plus freight, charges and duties to our markets. What is it this proposed law requires of the importing merchant that is impracticable and theoretical? Why nothing more or less than what of necessity every successful merchant now knows. Are our importing merchants fools? Are they ordering and importing into this country millions of dollars of goods without first knowing exactly what both the competing domestic and competing foreign article is selling for in our markets? Will a single, capable successful importing merchant of this country stand up and say that he is ordering and importing goods into this country without first finding the principal markets therefore and values thereof in such markets and the values of all other competing goods American and foreign therein?

Business Men Know Their Markets

Business men are not that reckless as to engage in competition in our markets without first knowing those markets. And while those markets vary they do so no more than, if as much as, the foreign markets, now the standard of our appraisements. On the contrary, being in the midst of our markets and intimately in touch therewith by means of the telegraph, telephone and daily quotations of the press, all to be supplemented by the Government agencies for that purpose provided by the Fordney bill, they can exactly inform themselves every hour of every day of the exact market value of all competing American and imported merchandise.

Editor's Note—This is the second and last part of the Hon. Judge Marlon De Vries' talk on the American Valuation Plan in the new tariff at the convention of the United States Potters' Association on December 8.

Upon the other hand the present system requires that the merchant for entry purposes inform himself of the market value of the imported goods for home consumption in the distant foreign country and at the time of exportation.

Old System Not Very Effective

Now which is the more practicable? Which is the more reasonable, to require the merchant to be advised of his competing values in this country, or, local values of some country thousands of miles away. The plain truth is, as known to all familiar with these proceedings, that the latter cannot be practically or effectively done, whether by the merchant for entry purposes or the appraising officers for appraisement, and, if falsely done cannot be so shown because in 99 cases out of every 100 it is beyond our jurisdiction for inquiry or punishment. All who know anything of this system know it results simply in the invoice or export value being accepted as the foreign home market value. That export value more often than not actually differs from the foreign home market value. Under the existing system, therefore, it results, and has obtained for over 100 years, that the foreign exporter without any oath or other restraint than his conscience fixes the value upon which our import customs duties are levied. Why not have him also fix the rates? Common sense renders it obvious that it is just as effective to have the power to fix the basis as the rates of our tariff laws. Either is a power to effectively destroy both the revenue and protection thereby secured.

New Plan Requires Knowledge of American Markets

If there were no other virtue to American valuation than that it would compel our importing merchants to thoroly acquaint and keep themselves posted upon the American markets in which they are trading, that system would have its vindication in this beneficial requirement. If they are not now so advised they will be compelled so to be under the American plan, whereby obviously better business methods will be assured. But how about the appraising officers?

The importing merchant for entry purposes is now required to know the home market value at the day of exportation of the particular country whence comes his invoice regardless of the date ordered or purchased. The appraising officers as well under present law must daily be advised of that value in every country exporting to the United States at all times and all the variances of that market in every such exporting country. The identical goods, and, if none such of similar goods, and, if none such the cost of production thereof at the factory plus packing charges plus freight to the principal market of that country.

Market Value Governs Tariff

It should ever be borne in mind that under both the proposed American and existing foreign system imported goods are appraised at the market value on the day of exportation from the country of production. Under the proposed American system, then, the importer has the time from the day of shipment until arrival in the United States to ascertain the prescribed market value in the United States for entry purposes. Under the existing system he has for entry purposes to do the same, to wit, ascertain the market value on the day of exportation, regardless of when the goods were ordered or bought, and that tho the foreign country of exportation may be thousands of miles over the seas and beyond any reasonable means of ascertainment. Remember that at present it is not the invoice, or contract, or export value that he must ascertain and enter his goods at, but the market value for home consumption, in the country of exportation, and that that is and has for a century been the law. I submit in all candor and fairness that the American system presents by far the easier and more certain method of ascer-

taining the value at which goods shall be entered, and, therefore, the opposition in truth is for other and hidden reasons.

Says Present System Is Inefficient

The mere mention of these absurdities must convince the fair mind that the present system is a rank impossibility in its performance and administration, results in the foreign invoice being accepted as the dutiable value of the imported goods, and that thereby the foreign exporter fixes the dutiable basis of our imported goods. And this is the "sane system of 100 years."

Now while it was before said that the American plan as a basis for our import duties has nothing to do with the amount of duties, the prescribed rates alone affecting that, it does, however, prescribe and regulate the penalties assessed for undervaluation, and that is where the pinch comes.

Importer Must Show "Good Faith"

But is it not plain to all that if provision is made by the law that upon a showing of good faith by the importer he shall be relieved of these penalties, no honest man can complain thereof? Such a provision is contained in the Fordney bill and such a provision is not now and never has before been written in any tariff law. Further, the Fordney bill provides, as a part of the American system, that any importer may appear before the appraiser after his goods have left the country of exportation, while en route, and upon exhibition of the evidence and facts of his purchase, require of the appraiser an "advisory" appraisement for entry purposes, which if he so enters his goods, will estop any possible penalties being assessed.

Furthermore, the Fordney bill provides that all price and market value data gathered by the agencies of the Government shall be made available in aid of importers upon entry and the appraisers upon appraisement.

No Relief From Penalties Provided in Old Bills

Neither now nor for a hundred years past have our tariff laws provided either relief against penalties on a showing of good faith, or compelled advisory appraisement in their avoidance.

Has any one heard or read in these violent denunciations of the American plan any suggestion of these absolute safeguards to all honest importers being provided as a part of that plan?

No system in a hundred years, so practicable or so reasonable and fair to the honest importing interests has ever been proposed by the committees of Congress. Whoever studies and rests decision upon what is here really proposed, rather than in myriad wild criticisms of what is not proposed, must render judgment in favor of the American system.

Fraud and Undervaluation Impossible

Supplemented by provision for valuation tariffs, for seasonable and contract goods ordered or purchased long before imported, whereby upon such engagements being made importers may appear before a duly constituted board or other authority and after full investigation and hearings, have established a valuation basis for such classes of goods, to be effective at the future time and as imported, a provision which should exist under all systems of appraisement, absolute safeguards will be provided whereby no honest importer can possibly suffer injury, harsh penalties of the existing system will be removed and the wrecking influence of undervaluation and frauds be forever made impossible.

Bearing in mind that the adoption of American valuation will be a radical change, particularly from the presently enforced law, I believe that change should be effected gradually and after due hearing of those interested. In the Gray Book submitted the Committee upon Ways and Means by my associates and myself a careful plan of legislation to that effect

was presented and recommended. In an address at Chicago of the same purpose I stated:

Convinced American Plan Is Superior

"In addition thereto is the large question in this proposed legislation, whether, in view of its great importance upon our industries, the law should be enacted upon the basis of hastily estimated values and equivalent ad valorem, or should be enacted upon the basis of foreign values, committing to the tariff commission or some specially constituted tribunal such as is presently designed the power and duty after full and fair hearings of all interested to convert these ad valorem, first, when wise into specifics, and secondly those remaining to American valuation ad valorem. Candidly I have ever asserted the latter view, and am now firmly convinced of its superior wisdom."

The message of the President addressed to Congress on December 7, was in perfect accord with these views.

Let us have American valuation, carefully and fairly calculated, adjusted with due regard to all interests and all industries, gradually but certainly and as speedily as consistent therewith made effective.

Urges Early Change to American Plan

There should, however, be no uncertainty and the mandate of the tariff act should be, that as speedily as practicable, the Tariff Commission should proceed to a conversion of the tentative rates upon the foreign valuation basis to equivalent rates upon the American valuation basis, and the President be authorized to put the same into effect upon the earliest practicable notice, supplementing the same from time to time with valuation tariffs for season, contract and such other goods as trade and commerce may be found to warrant.

For the controversy between foreign and American systems of tariff valuation, is not so much between the merits of methods as it is between honest and dishonest valuation. It is a fight between American industries and foreign industries, which shall occupy the markets of the United States; between American labor and foreign labor, which, in days of stress, shall be employed and which shall walk the streets; between, in these days, the American home and the foreign home, which shall, and which shall not, be prosperous and contented. Therefore, let all who are for foreign industries, foreign labor, and foreign homes stand for the foreign plan; let all who are Americans and who are for American industries, American labor, and American homes stand for the American plan and for America.

* * *

NEW PLANT OF ALBRIGHT CHINA WORKING

Four bisque kilns have been drawn at the new No. 2 plant of the Albright China Co., at Scio, Ohio, and within a fortnight the first glost kilns will be drawn. It will be at least six months before this shop is completed to conform with original plans, but in the meantime, the production of ware will continue.

Five kilns were placed in operation in this new shop some weeks ago, as the original plan to erect nine kilns was not worked out during the early stage of construction. However, erection of four more kilns is now under way, and these will very likely be topped out before the end of the year.

Considerable delay was experienced by the firm in getting this new shop in operation, on account of the inability to obtain labor and building materials when the construction was first started.

This Scio plant was the only new pottery built during the year. The Albright China Co. will soon have a capacity of 18 kilns and eight double decorating kilns. The firm will not show its line in Pittsburgh in January, but arrangements are being

made to make a display in the Hotel Morrison, Chicago, when the Pottery Exposition opens there in February.

* * *

POTTERS WANT FORDNEY TARIFF BILL

At a special meeting of the Executive Committee of the United States Potters' Association, held in the William Penn Hotel, Pittsburgh, Pa., December 15, and which was attended by about 30 manufacturers of china and semi-porcelain ware, Chairman T. A. McNicol, of the T. A. McNicol Pottery Co., East Liverpool, was instructed to work in accord with other interests in urging upon the new Congress to pass the Fordney Tariff Bill at the earliest date, including the American Valuation clause.

At this meeting, a penknife, made in Germany, was exhibited. Its sales record was charted. This knife cost nine cents laid down at an Atlantic port, and its cost at retail was \$5.

"We cannot tell who got the bulk of the money paid at retail for the knife, but we do surmise that the tariff paid on this article under our present laws was on a basis of nine cents. Is it any wonder the demand for American Valuation in our tariff is growing?" Mr. McNicol queried.

* * *

JAIL FOR ANTI-TRUST LAW VIOLATORS

The investigation of the building trades by the Lockwood legislative committee, which resulted in the indictment of 53 individual and corporation members of the Tile, Grate and Mantel Manufacturers and Dealers' Association on the charge of violating the Sherman Anti-Trust Law, culminated in sentences of four months' imprisonment for four New York tile men, imposed by Judge Van Fleet in the New York Federal Court. 29 other defendants were fined sums ranging from \$500 to \$5,000. 11 corporations were fined \$4,000 each and six others were fined from \$500 to \$2,500.

* * *

MAY GET VITREOUS CHINA PLANT

It is quite possible that a line of vitreous china dinnerware and vitreous china hotel ware will be added to the production of the East Liverpool district before many months, that is, if present plans do not go amiss. One of the manufacturing concerns here which operates more than one plant, but with separate units, is considering such a proposition, and tests are now being made of different clays to determine a proper body.

For some years the buyers of the larger jobbing houses have pointed to the wisdom of having such a line made in East Liverpool, as semi-porcelain and china dinnerware and hotel ware could be packed in the same car. Such a saving would prove to be of advantage to the large distributing interests.

Plants manufacturing vitreous china ware nearest to East Liverpool are the Mayer China Co., at Beaver Falls, Pa., and the Chelsea China Co., at New Cumberland, W. Va.

* * *

MADDOCK SECURES GOOD CONTRACT

The Thomas Maddock's Sons Co., Trenton, N. J., manufacturer of sanitary earthenware products, has secured orders for the installation of sanitary fixtures at the Perry and Greenfield school buildings at Pittsburgh, Pa., comprising about 100 closets and 75 lavatories. The company will furnish, also, the equipment for the new Terminal Building of Pittsburgh, to consist of 100 lavatories, 75 closets and 10 drinking fountains.

E. McELHOSE TAKES C. U. HARRIS' PLACE

Charles U. Harris has been succeeded at the Paden City (W. Va.) Pottery Co., by Earnest McElhose, of Sistersville, W. Va. The latter was assistant to Mr. Harris before his appointment as manager. Mr. Harris has completed an arrangement to display the line of the Sherwood Bros. pottery at the Pottery Exposition in Pittsburgh, Pa., in January, and at the Hotel Morrison Chicago exposition, in February. This is the first time this line has ever been shown at these sales expositions.

* * *

F. K. PENCE LEAVES AMERICAN ENCAUSTIC

Forest K. Pence, who has been head of the research department of the American Encaustic Tile Co., Zanesville, Ohio, for the past eight years, will take charge of the newly created research department of the Knowles, Taylor & Knowles Co., East Liverpool, Ohio, after January 1, according to the announcement made by Homer J. Taylor, president of the latter concern. Mr. Pence was at one time instructor in ceramics at Ohio State University.

* * *

STARTS NEW CHINA STORE IN MEMPHIS

R. D. Goodwyn will start a new queensware store on Union avenue, Memphis, Tenn., on January 1, 1922. He was the former president of the Memphis Queensware Co., which was later purchased by Leslie M. Stratton. He retired for his health and went to Florida. The style of the new firm is not announced, but it will be large enterprise.

* * *

TO FIRE KILNS WITH OIL

Four kilns at the plant of the Colonial Pottery Co., East Liverpool, Ohio, will be fired with oil, effective January. Equipment is now being installed. Storage tanks of considerable capacity have just been completed.

* * *

ACQUIRE OLD POTTERY

The General Chinaware Corporation, Trenton, N. J., has acquired the old Willets pottery, and will commence the immediate installation of machinery and equipment for the manufacture of dinner ware. It is proposed to inaugurate production at an early date. Only a portion of the plant will be occupied at the present time, the remainder being leased for another line of business.

* * *

INCREASING OPERATIONS

The Atlantic Terra Cotta Co., Perth Amboy, N. J., and the Federal Terra Cotta Co., Woodbridge, near Perth Amboy, have been adding to their working forces and increased operations are now under way at the plants.

* * *

REBUILDING DESTROYED PART OF PLANT

The Robinson Stoneware Co., 226-36 Newel Street, New York, N. Y., will commence the immediate rebuilding of the portion of its plant recently destroyed by fire. The factory is two-story, and the new work is estimated to cost close to \$20,000.

* * *

PLANNING INCREASED OUTPUT

Half a million dollars output is what is promised by the officials of the Clay Craft Potteries, Inc., when two new units adjoining its factory on the San Fernando Road, near Los An-

geles, are finished. This company specializes in chemical stoneware, garden pottery, decorative tile, and so forth. The demand for such wares is the reason for the two new units. The company owns a mine in Death Valley, which is said to contain the only known clay deposit west of the Mississippi suitable for the ware it manufactures and which, owing to the impossibility of competition, it can put out at such low prices. The clay, when mixed with cheaper clays, will make very superior products of a common kind. Taking all this into consideration, the Clay Craft Products, Inc., thinks it has made a low estimate of its coming production.

* * *

ANOTHER POTTERY IN EAST LIVERPOOL

The Ceramic Pottery Co., of East Liverpool, Ohio, has been incorporated with a capital of \$10,000, it is said, to manufacture various kinds of pottery. The incorporators are John H. Henke, Kenneth Martin, Bensley Percival, M. R. Stier and M. J. McGarry.

* * *

FINES SHERMAN LAW VIOLATORS \$3,000

Charged with violating the Sherman Anti-trust Act, seven eastern terra-cotta companies and ten individuals pleaded guilty and were fined \$3,000 each by Federal Judge Learned Hand. The prosecuting attorney, Colonel Hayward, asked the court for a penalty more severe than a fine but the pleas of the attorneys for the defense won. Two of the terra cotta men indicted stuck to their pleas of "not guilty" and these cases will be disposed of after some of the other violators of the Sherman law have been taken care of.

* * *

GUY COOKE TO REPRESENT CROOKSVILLE

Guy Cooke, manager of the New York offices of the American Clay Products Co., of Zanesville, Ohio, has completed an arrangement whereby he will represent the Crooksville China Co.'s line in the same market. Mr. Cooke has just returned to his office after spending several days at the Zanesville and Crooksville plants.

* * *

ANOTHER PLANT IN PORCELAIN FAMILY

The Porcelain Appliance Corporation, Parkersburg, W. Va., has been organized under Delaware laws with capital of \$25,000, to manufacture porcelain products of various kinds. The incorporators are J. H. Parker, Parkersburg; R. G. Spencer, Carey, Ohio, and H. R. Holmes, East Liverpool, Ohio. The company is represented by the Corporation Trust Co. of America, du Pont Building, Wilmington, Del.

* * *

NO CHANGES IN DINNER SHAPES

Few if any new dinner shapes will be placed on the market next January by the semi-porcelain manufacturers. Buyers have present shapes pretty well established. There will be a number of new decorations shown the trade, as is always the case at this season of the year, but all for 1922 delivery.

* * *

STANDARD SANITARY TO ERECT NEW BUILDING

The Standard Sanitary Manufacturing Co. of San Antonio, Tex., has recently purchased property for the erection of a one-story brick and tile building, to cost approximately \$75,000. The new location has a frontage of 260 feet on River Avenue and 150 feet each on Grand Avenue and Avenue B.

The Superintendent

Helpful Hints for Practical Men
Whose Problem is Maximum
Production with Minimum Cost

HOW MUCH CAN YOU AFFORD TO SPEND?

The question that is uppermost in the mind of every manager, superintendent or owner whenever any additions or improvements are contemplated on the plant, is "how much can we afford to spend for cost cutting equipment?" In order to facilitate the arriving at an answer to such a question in any given case, the accompanying formula has been evolved. The use of this formula is especially applicable in line with the articles on cost cutting that have been appearing in the pages of this journal during recent months, and because of the general interest on this subject at the present time.

The formulae are arrived at as follows:

Let A equal the number of days in the year that the plant usually operates, or the number of days that it is estimated it will operate. This item must be determined conservatively and some allowances made for possible shutdowns due to a shortage of business or accidents.

B equal the daily cost of labor and purchased material, such as coal, that will be saved by the new installation. This usually can be estimated rather closely.

C equal the daily saving that will be made on account of increased production.

D equal the saving on account of increased quality.

E equal any daily increase in cost of operation and labor, power materials, or repairs over the cost of the same operation at present.

F equal the interest rate that would annually be paid if the money for the expenditure were borrowed. Even if the money is not borrowed, it is very essential that an interest rate be figured.

G equal the annual depreciation of the contemplated equipment.

H equal the annual obsolescence of the equipment.

J equal the present scrap value of any equipment that will be discarded.

K equal the maximum expenditure that is advisable.

L equal the cost of the contemplated improvement or addition installed.

M equal the interest return that can be expected when the improvement is in operation.

Of course in advance of the installation nearly all figures are estimates, but most of them can be arrived at very closely. F, G, H and M are all written in percentages such as .06, .10, .25 and so forth.

To arrive at the investment possible in any given case, use the formula

$$K = A \times \frac{B + C + D - E}{F + G + H} + J$$

To arrive at the possible return on the contemplated investment, use the following formula:

$$M = A \times \frac{B + C + D - E}{L - J} - (G + H)$$

In this formula the sum of G and H should be subtracted. It seems that there ought to be one other point consid-

ered, that is, the ability of the improvement to render unnecessary some expenditure of additional capital. For instance, the installation of any equipment that will turn the kilns faster will make it unnecessary to build more kilns for increased capacity. The formulæ take care of this apparent advantage in favor of the improvement by considering the savings or profits in reduced costs, increased production or better quality, and therefore it is thought that any consideration of the ability to render the use of additional capital has been covered.

Concrete Examples Considered

Considering the first formula, suppose that we wish to replace an old stack of a down-draft kiln with a new one, because results from the kiln have not been satisfactory.

Let A equal 200.

B is hard to figure, but suppose that every time this kiln is burned there will be a saving of One Dollar in labor and One Dollar in fuel, and that the kiln is burned on an average of 20 working days. This would make B equal to 10 cents.

We will omit any consideration of C because it is doubtful if the improvement would increase the production sufficiently to take it into account.

D might be estimated as One Dollar, which would amount to \$20 a burn. The draft has been poor with the old stack, and the dampness gathering on the lower courses of the setting has caused a large loss due both to the softening of some and the scumming of other brick.

E will amount to nothing in this case.

F can be considered equal to .06.

G is estimated equal to .05 because the stack ought to last 20 years. However, the kiln has been in use for several years, and we must figure that the kiln and stack will be of no further use after six years, for we contemplate enlargements that will occupy the present location of the kiln and stack.

H is therefore equal to .12.

Suppose that we consider that the brick from the old stack will be worth \$300, we use that figure for J.

Our formula therefore becomes:

$$K = 200 \times \frac{.01 + 1}{.06 + .05 + .12} + 300 = \$1,260$$

If, therefore, the stack cannot be built for \$1,260, the improvement would entail a loss rather than a saving. We have shown this close a comparison purposely. As a matter of fact the large majority of cost cutting improvements that can be made in clay products manufacture show a value K according to the formula used often as large as 10 and even 30 times the contemplated cost.

The second formula will often show a return of 15 and even 30 per cent. on an investment.

E will be used in cases like the installation of motor trucks, where the cost of oil or gasoline was not encountered before, or in the case of a digging machine where no power was used formerly.

There is another point that might affect the advisability of making an improvement. Suppose that this kiln stack had been blown down by a storm or struck by lightning so that the kiln could not be used without a stack. Suppose that the stack would cost \$1,500. In this case there is the additional benefit to be derived from the contemplated improvement of the saving in the interest, depreciation and obsolescence of the value of the kiln. Suppose that the kiln cost \$5,000 and that the interest, depreciation and obsolescence amount to the same as the values for F, G and H as above, namely 23 per cent. The value of these items in dollars and cents will then be \$1,150 annually. This makes the allowable investment equal \$2,410.

The Letter Box

A Place Wherein Letters
That Have General Interest
Are Published
and Commented Upon

THIS TIME THE JOKE WAS ON "RYTT"

Paralleling the story of the macaroons, with which every delegate to the recent American Face Brick Association convention is familiar, is the one reprinted below, which was sent to us by E. V. Garraux, branch manager of the B. Mifflin Hood Brick Co. at Atlanta, Ga.

I. A. Ryttenberg evidently has another reason now to boast of the high cost of his "Airedales."

"The members of the A. F. B. A. at the last two conventions have had much pleasure and sport 'kidding' Rytt and his Airedales. The wit and repartee that passed has caused much fun and lots of good feeling.

"Some one, however, has at last taken Rytt for a real fool. Those who were at the last convention were surprised to learn that he was presented with a bill for \$26.05 for laying up a panel of 100 brick. It was first thought to be a joke, but proved to be a reality being itemized as follows:

16 Hours Mason
16 Hours Helper
10 Hours Carpenter

"Rytt says this proves Airedales are the finest and most expensive brick in the world.

"Does anyone want to bet that he paid this bill?"

✂ ✂ ✂

PAVING BRICK PLANTS BUSY

A report just issued by the Federal Reserve Bank of the Fourth Federal district states that paving brick manufacturers within the district for the last six weeks have in most part been operating at capacity production. Shipments have been classified as heavy and inventories are low, cars being loaded direct from the kilns. The report also discloses that where freight rates have been readjusted, improvement in demand is the most marked.

✂ ✂ ✂

HANDLING COAL WITH UNLOADER

The Ayer-McCarel-Reagan Clay Co. at Carbon, Ind., has recently installed some labor saving equipment. A coal unloader is now in use, eliminating all shoveling of coal from cars to kilns. Methods in the clay pits have been improved, and only two men are required to produce 100 tons of clay in nine hours. The company has in the past marketed all its product thru three silo organizations, and until 1921 has never been able to meet the requirements of these organizations. Production in 1921 has been somewhat curtailed, as silo tile were not in such great demand as formerly.

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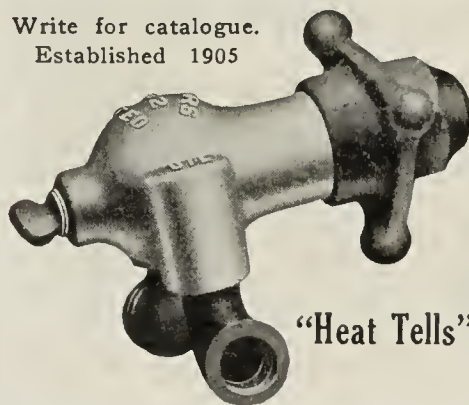
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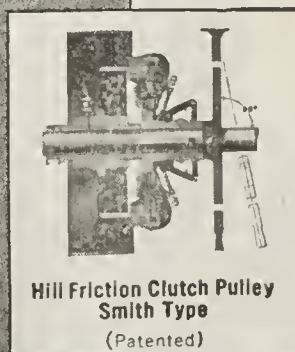
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RIGHT QUALITY

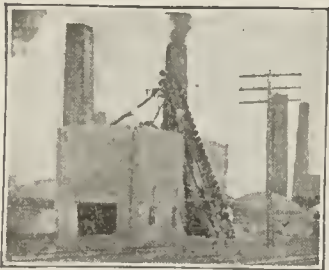
*Write us and we will tell you
about them and submit prices*

The Evans Builders Co.

Fourth and Plum Sts.,
Cincinnati, Ohio

921 Fifteenth St., N. W.
Washington, D. C.

UNLOADING FOR 3 CENTS PER TON



Elevating and conveying equipment. Steel and malleable buckets furnished in all sizes and shapes. Chain, sprockets, etc.

Let us quote you on your requirements.
The Columbus Conveyor Co., Columbus, O.

PULSOMETER STEAM PUMP



Will keep your pit free from water. Pumps continuously without attention or adjusting. Handles any fluid up to 40% solid when agitated and is particularly suited to Clay Plant needs.

NEEDS NO LUBRICATION!
Ask us for proof of performance

PULSOMETER STEAM PUMP CO.

Executive Offices, 224 W. 42nd St., New York, N. Y.
Distributors in all principal cities

CARS

OUR FACTORY
THE LARGEST
IN THE WORLD
DEVOTED TO
CAR BUILDING
ALONE
CARS
FOR
EVERY MINING
AND
INDUSTRIAL
PURPOSE
CATALOGS ON
REQUEST
THE
WATT MINING
CAR WHEEL
CO.
BARNESVILLE OHIO

In the Wake of the News

Being Brief Mention of a Host
of Interesting Happenings in the
Varied Fields of Clayworking

"BUSINESS LOOKS GOOD"

H. M. Strauss, of the Roper-Strauss-Ferst Co., Birmingham, Ala., is optimistic about business conditions. He says, "Business looks very good, especially public work, as bonds are being easily sold. More hollow tile residences have been sold in Birmingham than ever before."

BUILDING DRYER AND KILNS

Three kilns of 140,000 brick capacity are being erected at the plant of the Gadsden (Ala.) Clay Products Co., according to Gordon Hood, secretary, treasurer and general manager. A waste heat drying plant also is being installed, the daily output of the plant to be 35,000 common and face brick.

INCREASING CAPACITY TO 120,000

S. T. Edwards, manager of the Choctaw Brick & Gas Co., Mansfield, Ark., states that his company is installing equipment to manufacture brick by the stiff mud process, and that a ten-tunnel dryer has been built. Mr. Edwards says, "When the new equipment is completed we will have a capacity of 120,000 per day of dry press and stiff mud brick."

The company owns 14 gas wells and burns gas in the kilns.

REMODELING PLANT

A. Anderson of the Anderson Brick & Tile Co., Sand Point, Ida., has purchased the interest of his partners in that plant and is now changing the system from dry press brick to wire cut. Face and common brick, drain tile and hollow building tile will be the products manufactured. This plant was formerly known as the Sand Point Brick & Tile Co.

A crew of ten men is being kept busy remodeling the plant: an old continuous kiln is being dismantled and a new dryer will be built. Mr. Anderson has recently purchased a brick machine from A. T. Deshman of Spokane, a retired brick manufacturer.

BUILDS TWO 30-FOOT KILNS

Business has been somewhat slow for the West Salem (Ill.) Hollow Brick & Tile Co. Two 30-foot round down-draft kilns have recently been installed.

TO INSTALL ELEVATOR AND SCREENS

Warren Churchill of Witt & Churchill, Frederick, Ill., reports that they have installed a new tile machine cutter and dry pan. The company is also planning to put in new elevator and clay screens.

PUTS IN NEW BOILERS

Business has been unusually good all year for the Cannelton (Ind.) Sewer Pipe Co., writes E. F. Clemens, secretary. Mr. Clemens says, "Our plant has not been shut down on account of lack of business for six or seven years, and has only been shut down once for this cause since we have been in business. We have been running full time all year and shipping practically everything we made."

The company has just purchased two new 150 H.P. boilers, which will be installed about January 1. Another switch will be installed, and will be used for loading and coal handling purposes. The company is planning to purchase coal handling machinery in 1922.

STARTS WORK AT CAPACITY

The United States Brick Co. at Tell City, Ind., has been operating at 100 per cent. and expects that 1921 will be one of the best years in the plant's history. This plant manufactures face and common brick.

BUILDING NEW KILNS

Work is progressing on two new kilns, each 14 feet wide and 35 feet high, which are being erected at the National Tile plant, at Anderson, Ind. Business remains good at the tile plant, with the operating schedule as usual.

INCREASES MANUFACTURING FACILITIES

The C. & G. Potts Co., of Indianapolis, Ind., which specializes in the manufacture of clay working machinery, has completed a new \$60,000 foundry and is erecting a two-story fireproof storage building. The company plans to gradually increase its production.

KALAMAZOO CLAY CO. STARTS WORK

The Kalamazoo Clay Co., which has recently built a five-kiln plant at Carbon, in Clay County, Ind., has started manufacturing. The production of this plant will be sold to the Kalamazoo Tank & Silo Co., at Kalamazoo, Mich. The two plants are operated by one company.

INSTALLS NEW SEWER PIPE PRESS

Increased production as well as lower production costs is hoped for by the Plymouth Clay Products Co., Fort Dodge, Ia., thru the installation of a press for making small sewer pipe. The company feels quite optimistic about business in the coming season.

BUILDING UP-DRAFT KILNS

S. E. Isgett is at present building two new up-draft kilns with a capacity of 100,000 each on his plant at Gilbert, La. The installation of a stiff mud brick machine has been completed. The company operates six to nine months in a year.

COLLECTING DATA ON HOFFMAN KILN

The Standard Oil Co., Elizabeth, N. J. is endeavoring to collect data on the use of the fuel oil in the Hoffmann kiln for the information of its people in foreign fields. C. H. Bunn, one of the company's engineers, is handling this matter.

GOTHAM BUILDING UNIONS MUST REFORM

Turning its attention to the building unions of New York the Lockwood Committee has issued an ultimatum of "reform or jail" to a group of unions whose practices have been under investigation. Many of the union rules which have a restrictive effect are in violation of the law, Attorney Samuel Untermyer declared, and workers' representatives are open to prosecution for conspiracy.

NEW YORK MOVES TO AVERT BUILDING STRIKE

A movement has been started by the building trades employers in New York to extend the agreements at present existing between employers and unions to March 1. If unsuccessful



CRESCENT BELT FASTENERS

"Make Good Belts Give Better Service"

Once on, Crescents are on to stay. A Crescent joint will outlast the most durable belt. No part of belting is punched out or weakened. Maximum strength maintained. Belt runs same as endless on pulley side. No knocking or thumping. Noiseless. Joint hugs pulley. Full power transmission insured.

Write for new Booklet W on Increasing Belting Efficiency.

CRESCENT BELT FASTENER CO., 381 Fourth Ave., New York
Canadian Branch: 32 Front St., West, Toronto, Canada
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It's the Knowing How



A poor cook can spoil the most excellent food. It's the knowing how that determines the final quality.

Caldwell Cypress Tanks are finished products par excellence and backed by the "know-how" of over thirty years' experience. The fine materials of which they are made are not in themselves sufficient to give maximum strength, durability and tightness. It is the training and thoroughness of expert and experienced tank builders that have established for all Caldwell Tanks their enviable reputation.

Write for Catalogue

W. E. CALDWELL CO., Incorporated
2380 Brook St. Louisville, Ky.



TANKS
AND
TOWERS

"1922 Will Reward Those Who Lower Their Production Costs"

Every Clay Manufacturer should have a copy of "Clay Plant Construction and Operation," in his library. It is a timely text book containing a wealth of practical information on Labor Saving equipment, efficiency methods, etc.

The price of this handsomely bound volume is \$4.00 pre-paid.

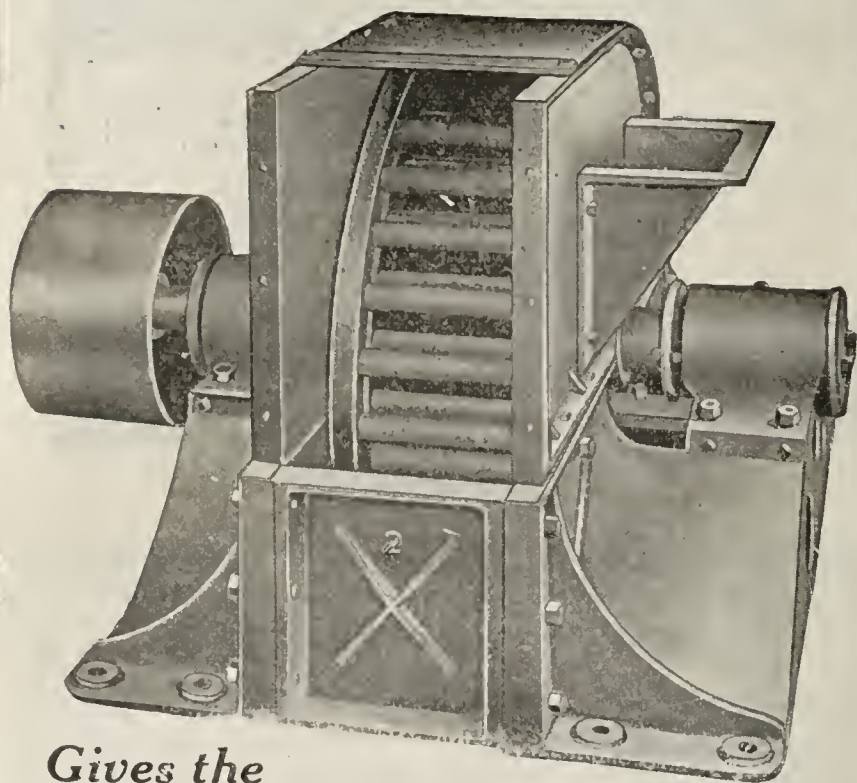
You can't afford to be without a copy. Send for it today.

Brick and Clay Record

407 S. Dearborn St.

Chicago

BRICK MACHINES MIXERS TRUCKS BARROWS
SCREENS MOLD BOXES LINERS



Gives the Best of Satisfaction

The quality of your ware depends largely upon your pulverizer. Fernholtz pulverizers give the best of satisfaction on surface clays to every user because they are practical and economical in every respect. All wearing parts are made of steel and all boxes are brass bushed and adjustable.

Write for complete information on all clay plant machinery. We manufacture almost everything

FERNHOLTZ BRICK MACHINERY COMPANY
ST. LOUIS, MO.

WHAT METHOD DO YOU USE?

This question when applied to the manufacture of Stiff Mud Ware deserves consideration.

The Modern Way is the Right Way

THE ROLLER PRESS for all clays, shales, fire clays, surface clays, short bonding clays and laminating shales and clays.

Brick, Hollow Ware, Roofing Tile, Floor Tile and Drain Tile can be made on the ROLLER PRESS.

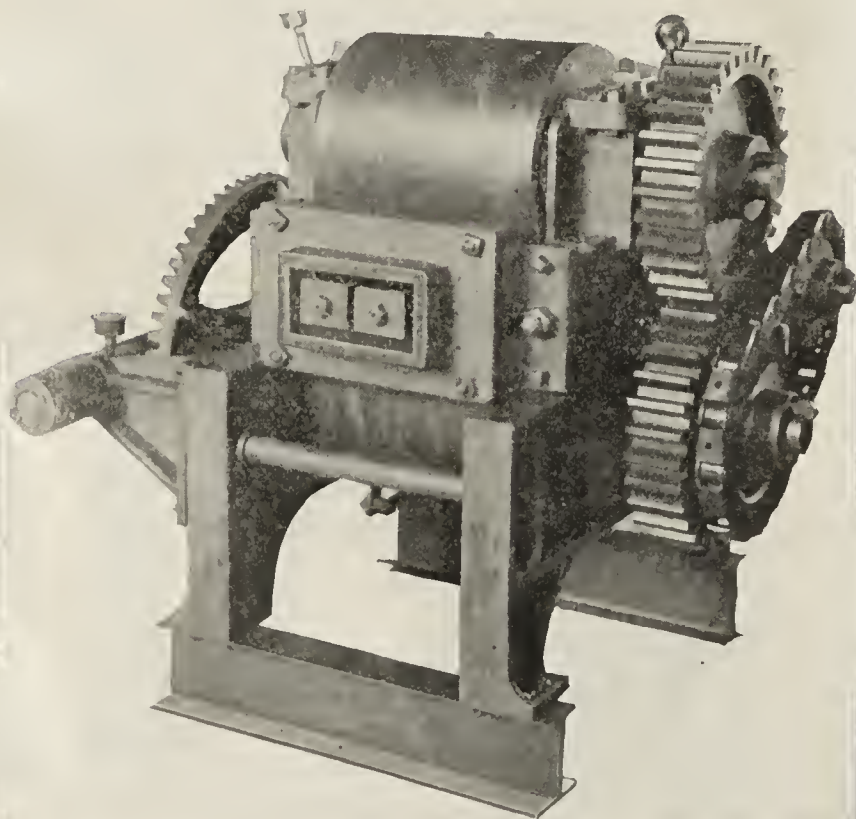
Start now to solve your production problems.

CLAYCRAFT SERVICE COMPANY

503 Wainwright Building

St. Louis, Mo.

Everything for the Clayworker.



the city faces a walkout of about 115,000 men of the building trades on January 1. A board of arbitration is to be appointed on which the employers are to have no representation and which is to determine the wage scale for 1922.

A strike in 1922 it is thought would do great injury to the construction industry as it would tie up a great amount of building. Samuel Donnelly, secretary of the Building Trades Employers' Association, showed that housing for 22,540 families was now under way or would be built in 1922. Building labor in New York, Mr. Donnelly said, is the highest paid of any in the country, with the exception of St. Louis.

CONTINENTAL CLAY TO START SOON

The Continental Clay Co., of Canton and Columbus, Ohio, is arranging to start most of its plants soon after the first of the year. C. E. Berridge, secretary of the company reports that all contemplated improvements have now been completed and operations will be started some time in January. The manufacturing plants of the company are located at East Greenville, Salineville and Warmingtton, all in Ohio. Plans for the \$500,000 sewer pipe plant to be erected in East Canton have been completed and steps will probably be taken to award the contract early in the new year.

TWO FRANKLIN PLANTS CLOSE DOWN

W. P. West, sales manager of the Franklin Brick & Tile Co., of Columbus, Ohio, reports that the month of September of this year was the largest in the history of the company, as far as sales are concerned. Another interesting fact is that December 1 of this year was the biggest day ever had as to the booking of orders. The two plants of the company, located at Taylor Station, east of Columbus, have been closed down for repairs and will likely be put into operation some time after the first of the year.

How Others Have Cut Their Costs

Note: It is the opinion of the Editors of Brick and Clay Record that concerns furnishing machinery and equipment to the clay industry are often in the position to tell of some unique installations where costs have been reduced or where difficult problems were met. The following information was derived from machinery manufacturers and gives some very valuable and instructive reading

LINK-BELT SILENT CHAINS SAVE MONEY

C. W. Hendershot, superintendent of the Cleveland (Ohio) Brick & Clay Co., says:

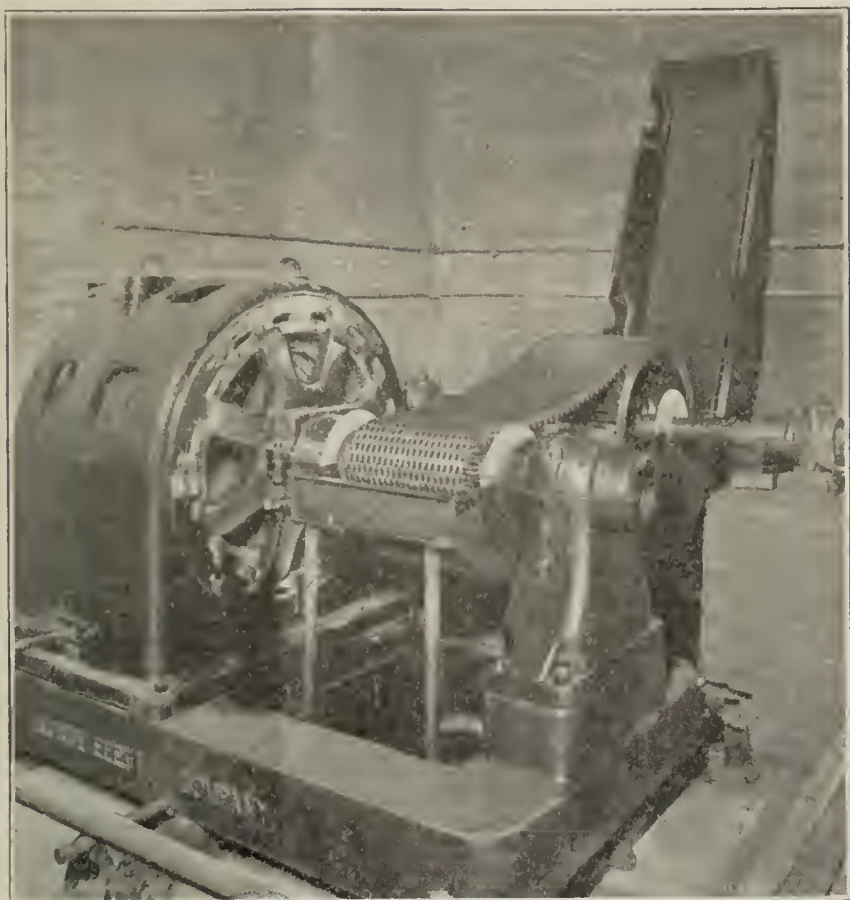
"When in 1918, because of the electrification of our plant, it became necessary to decide whether we should continue the old fabric belt-drive or replace it with less expensive equipment for transmitting power, we investigated every angle of the problem—and our final decision rested on Link-Belt silent chains.

"We now have two silent chain drives in operation. One is rather large, being driven by a 250 horsepower motor—and the other is a smaller drive operating with a 20 horsepower variable speed motor. Both are working to capacity at all times—carrying the power necessary to operate all our machines.

"In installing Link-Belt silent chains, we found besides the advantages in its manufacture, such as tempering each link to prevent the breaking away of the smaller links which

engage with the corrugated sprocket face, and the adoption of a casing which would give the chain an occasional bath of oil for its lubrication, that there was a financial saving of \$219.11 yearly by using Link-Belt silent chains as against fabric belts on our work.

"But the big and important advantages of the Link-Belt



View of One of the Link-Belt Co.'s Silent Chain Installations.

silent chain are that they have helped us lower our cost of production, because now we lose no power thru slippage—and friction is reduced to a minimum."

* * *

ERIE SHOVEL PROVES EFFICIENT

In line with the recent editorial campaign to promote production economy by the increased use of mechanical equipment, the following reports sent by the Ball Engine Co. and received from owners of Erie shovels are of interest:

"Before we resorted to a steam shovel, it required 11 men in our pit to keep our plant running at full capacity, which requires 160 tons per day. Now our Erie shovel and five men load this tonnage in five hours, assuring us plenty of shale at all times.

"We might add that besides this great labor saving, we now use only 50 pounds of dynamite per month, whereas formerly we used 500 pounds monthly when our shale was dug by hand.

"Our steam shovel has proven a very sound investment, and we do not hesitate to recommend it for tough shale digging, as the manner in which it digs thru our tough shale is remarkable."—Emmett Poston, Secretary-Manager Poston Brick Co., Springfield, Ill.

Shovel Increases Output Ten Per Cent.

The Interprovincial Brick Co. of Canada, Ltd., reports as follows:

"Our average monthly output has increased nearly ten per cent. since installing our Erie steam shovel two years ago, because of the fact that we are always able to keep well ahead with our clay supply. Before we had the shovel we had great difficulty in keeping up our production, especially in rainy weather, due to the reluctance of our men to work in a muddy pit in the rain.



Dryer, Transfer and Clay Cars,
with Flexible Bearings.
Switches, Turntables and Track.
THE CHASE FOUNDRY & MFG. CO.
COLUMBUS, OHIO

You won't have to worry about competition if you treat your clay with

R. H. Precipitated Carbonate of Barytes

You can safely guarantee that your brick will be

Scum-Proof

You can get a higher price and influence architects to specify your product because Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's dependable.

*We have a complete line
of high grade chemicals
for the clay industry*

The Roessler & Hasslacher Chemical Company

709-17 Sixth Ave.

New York

Chicago, Ill. Cleveland, O. St. Louis, Mo.
Kansas City, Mo. San Francisco, Calif. Philadelphia, Pa.
Boston, Mass. New Orleans, La.
Pittsburgh, Pa.

ECONOMY and DURABILITY

What more could you want in a grate than Economy, Durability and Efficiency?

The Canton Rocking and Dumping Grate is the "Fuel Saving Grate." They are especially designed with the thought of **Economy** and **Durability**, and there still remains to be shown one installation that has not effected worth while savings.

With the Canton it is easy to keep a clear, free burning fire and reduce clinker and cinder to the minimum. There can be no loss of fire through the bars as the special locking device keeps a smooth, even surface at all times.

Bars are double braced and always present an even surface to the fire, which renders this grate very durable. It is efficient because it breaks up the fire without wasting any fuel. Easily installed by any mechanic and bars can be replaced while the furnace is in operation. Investigate the Canton, by writing today for interesting new catalog. No charge.

CANTON GRATE COMPANY

1709 Dillon Place

Canton, Ohio



ASK THESE USERS



*Statesville Brick Co., Statesville,
North Carolina*

*Shreveport Brick Co., Shreveport,
Louisiana*

*Kendrick B. & T. Co., Mt. Holly,
North Carolina*

Belden Brick Co., Canton Ohio

*Merkley Bros. Ltd., Ottawa,
Canada*

American Truck Body Co., Inc.
Martinsville Virginia

"Our charges for dynamite are now only about one-third of what they were before we had the shovel, and we figure that this shovel paid for itself in the first year's operation."—F. B. McFarren, General Manager Interprovincial Brick Co. of Canada, Ltd., Toronto.

We enclose a photograph showing the shovel owned by the Logan (Ohio) Clay Products Co., whose report follows:

"We have not been able to work our Erie shovel to its capacity, but would say that with a good operator it will easily handle 50 to 60 tons per hour, which would ordinarily replace eight to ten men in our bank."

Shovels Adaptable to Various Uses

An interesting point in connection with the three steam shovels owned by the Bradford Brick & Tile Co., is that these machines have not only been very successful in cutting costs of excavating raw materials for clay products manufacture, but have been able to earn steady profit for the owners because of their adaptability to other kinds of work besides. This is indicated in the following letter:



A Novel Method of Clay Winning, Using Steam Shovel and Carts Drawn by a Caterpillar Tractor.

"We are operating one Erie shovel in the pit, and one on construction work about the plant, while our third shovel has been rented to a State road contractor.

"The shovel in the pit is taking care of two good sized plants, and is putting out about 250 yards per day. Later it will be called upon to handle about 400 yards of shale.

"We cannot say too much for the steam shovel, and our opinion of these shovels can best be summed up by the statement that all of them, after having operated in our pit continuously for three to five years each, only cost us \$69.23 for the first six months of the present year."—D. Hendryx, Assistant General Manager, Bradford (Pa.) Brick & Tile Co.

* * *

PROCTOR DRYERS VERY ECONOMICAL

In answer to our question Proctor & Schwartz, Inc., has volunteered the following information:

"We are in receipt of your favor of November 28 regarding the December 27 issue of the Brick and Clay Record with reference to special cost cutting. You are probably familiar with the fact that Proctor dryers have been installed in a great number of the various branches of the ceramic industry, and to try to attempt to write an article on each one of these would consume entirely too much time and space.

"We judge what you want is a small outline of some of the representative installations we have in reference to the

saving which these machines have accomplished. As representative of the drying machines which we have installed in the electrical porcelain plants, we might take a particular instance of a machine which has been installed at one of the largest electrical porcelain plants. This machine is handling electrical porcelain insulators of large and small size, and has reduced the floor space required to approximately one-twenty-fifth of that previously occupied, has reduced the drying time from approximately 30 days to 30 hours and has reduced the labor required for handling this material approximately 50 per cent.

Reduces Time and Floor Space

"Another example—in the manufacture of saggers, we have a dryer installed at a plant which is working in conjunction with a sagger press. Before these machines were installed, one sagger man could make about 50 saggers a day. After these saggers were made, they were then carried by hand to a dry room. After installing the two machines, the press and the dryer, one man could make 250 saggers and have them dried during the day time. The saving in cost per sagger on the labor alone is a tremendous factor besides the saving in the floor space and also in the fact that exhaust steam is used in the drying in place of live steam.

"Probably one of the greatest savings in the reduction in cost applies to a certain industry which makes large bodies of clay weighing approximately 2,500 pounds apiece, where it required from seven to eight months to make these pieces of ware and dry them. They are now being dried in exactly 21 days. The tremendous saving in floor space is also one of the big items in the reduction of cost. Another big item in the reduction in the cost in this installation is the fact that in their old method about 50 per cent. of the ware was not dried properly, the result of which was—the life of the ware was only 50 per cent. as long as the life of the ware coming from the Proctor dryer. Both of these items alone have reduced the cost of production of this material to a very small percentage of what it formerly was.

Increases Amount of No. 1 Ware

"We have numerous installations in the field of high grade refractories, such as magnesite, chrome, bauxite, silica, fire clay, and so forth, where the question of quality is of extreme importance and where the material to be dried presents great difficulties, due to the fact that small checks and cracks occur which are not perceptible to the ordinary eye and which develop after the material is put in the kiln. In this case one of the largest savings is in the quantity of first-class ware produced from a given quantity of raw material used. The drying time has been reduced in a great many cases from five days to a week down to 18 to 24 hours with an approximate similar reduction in the amount of labor required to handle the material.

"We could, of course, write at length on this subject, but imagine you wanted us to give you some general information on a few particular installations and trust the data given above is sufficient for your requirements."

✂ ✂ ✂

COAL UNLOADER SAVES \$12 DAILY

From the Galion Iron Works & Mfg. Co. we received this:

"We have your esteemed favor of the 28th inst., and are enclosing a copy of a letter that was sent to us by the Burton-Townsend Brick Co. of Zanesville, Ohio. They had written this letter to the Columbus (Ohio) Consumers Supply Co.

"We think that this letter will cover the subject referred to about as well as anything we know of.

"Replying to your inquiry of January 7, 1920, we wish to

POIDOMETER



PROTECT your ware from imperfection and faults due to improper tempering and mixing of the clay.

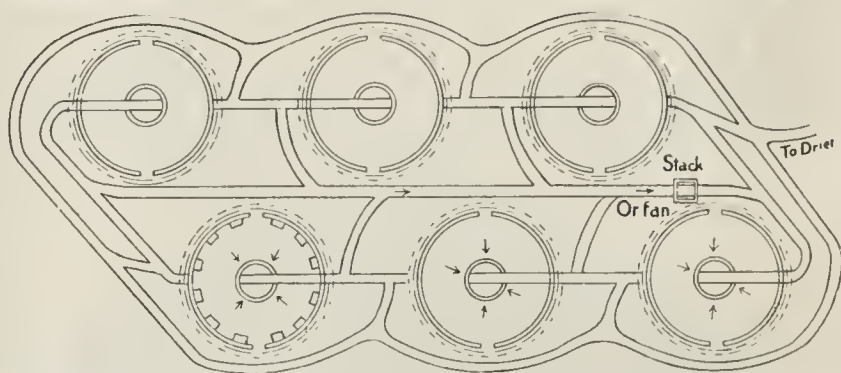
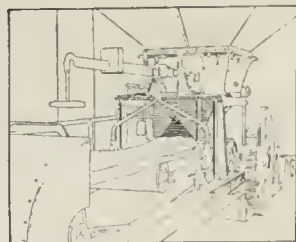
PROTECT your profits from excessive labor costs.

Install the Poidometer.

It will eliminate the labor of your pug-mill man. Never needs attention or repairs. Works under any conditions and is 99.75% accurate. Will weigh from 1½ to 21,000 lbs. per minute.

Write us today for complete information. Our service staff is always at your service.

**Schaffer Engineering
& Equipment Company**
2828 Smallman St. Pittsburgh, Pa.



"A 70% Increase in Production and a 50% Decrease in Fuel Consumption"

Read the letter we received from Mr. D. D. Omundson, Superintendent of the Citadel Brick & Paving Block Company, Ltd., Montmorency Village, Quebec, P. Q., Canada:

Minter System,
Columbus, Ga.

Dear Sirs:—

Wish to say that the result of operating the MINTER SYSTEM at this plant has been increased production per kiln of 70% over periodic operation and decreased fuel consumption of 50% on drying and burning.

The quality of ware burned is considerably better, and the loss due to burning and drying has been cut 75%, being reduced to practically nothing.

The early stages of burning are performed under ideal conditions and balancing the heat while finished is also made less difficult, resulting at this plant in complete elimination of salmons and burn-overs.

The permanence of construction and simplicity of operation are important features which remove all hazards from its installations where it is possible to operate downdraft kilns. This applies especially to that class of manufacturers who make high grade face brick, requiring special treatment during the various stages of the burn.

D. D. Omundson, Supt.

This letter is self-explanatory. We need say no more. But the MINTER SYSTEM will do for you what it does for others. Write us for proof. No obligation.

MINTER SYSTEM - Columbus, Georgia

RUBBER BELTING

Is the most economical form of belting for the various kinds of transmission drives used in the brick and clay industry.

And where can you find as satisfactory an article for elevating and conveying purposes as rubber belting?

Our belting experts will gladly assist you on any belting problems.

Write us today for samples and prices

Quaker City Rubber Company

Main Office and Factory
PHILADELPHIA

Branches:
CHICAGO PITTSBURGH NEW YORK

say we have an electric-driven motor with our Galion unloader. This unloader has saved us about \$12 per day and an endless amount of worry on account of dispensing with labor. If we were able to keep this unloader busy the entire day we would probably save \$20 each day.

"To give you an idea of what it is doing for us we wish to say that one man driving a team with a two-yard dump bed and one man who operates the coal bucket emptying the car would be able to unload a 50-ton bottom dump car in about four hours, figuring the team and driver at one dollar per hour, for four hours would be.....\$4.00
One man operating unloader at 50 cents per hour..... 2.00

Total\$6.00

"Fifty tons coal cost us about 12 cents per ton for unloading and hauling the coal probably 1,000 feet round trip. It may cost us from one to two cents per ton for power.

"We would not do without it. We are going to install another one of these unloaders at another plant in the very near future. We recommend it very highly."

✻ ✻ ✻

PRAISE WORK OF PYROMETERS

Dr. C. B. Thwing, president of the Thwing Instrument Co., has written as follows:

"Referring to your letter of November 28, we are enclosing extracts from a number of letters received from users of our pyrometers telling savings they have effected by the use of pyrometers.

"Since making the pyrometer installation we have cut 48 hours off of our burning period. The quality of our brick is much better, and the number of off-burns much less. We are not compelled to guess at the temperature of our kilns. We know."

"Since putting in the pyrometer we have cut 38 hours off our burning period. The quality of our brick is much better, and the number of off-burns are fewer. We don't have to guess how hot our kilns are. We know."

"We have saved many thousands of dollars by eliminating checked and soft brick."

Many Testimonials for Pyrometers

"We have saved coal and have a cleaner, more uniform grade of material."

"We burn in from 12 to 30 hours less time since we installed pyrometers."

"By the use of the pyrometer equipment we saved in our fuel alone during six months, more than enough to pay for the installation twice over, to say nothing of the satisfaction of knowing at all times just what heat we had in our kilns and improved quality of our product."

"Our burns are more uniform and we have saved on an average from five to ten per cent. in fuel."

"We find these pyrometers reliable, and that their use enables us to save both time and fuel with better results in the finished product. Our trouble from overheated kilns has been reduced to a minimum, and above all, since the extreme shortage in labor when we must use many inexperienced men, the pyrometers are of the greatest value."

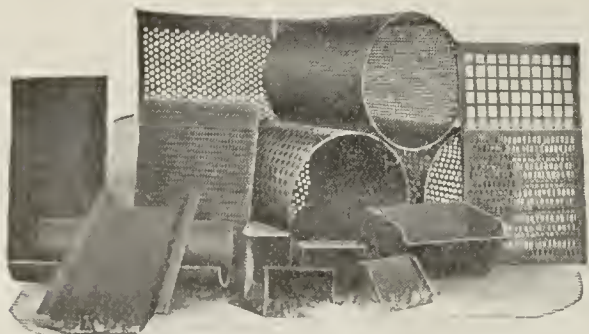
"We cut the time of burning from 72 to 59 hours, saving about one-third of the fuel and burning kilns evened. We secured uniformity in burning and our loss is cut to the minimum."

✻ ✻ ✻

AN ECONOMICAL EXCAVATOR

For the small plant where the daily capacity is little and where the expenditure of a large sum of money is unwarranted, the excavator, recently introduced in the clay indus-

HENDRICK SCREENS FOR ALL PURPOSES



ELEVATOR BUCKETS
CONVEYOR TROUGH and FLIGHTS
STACKS, TANKS,
GENERAL SHEET and
LIGHT STRUCTURAL WORK
LIGHT AND HEAVY STEEL
PLATE CONSTRUCTION

*Ask for your copy of the
Perforated Metal Handbook*

HENDRICK MFG. COMPANY
CARBONDALE, PA.

NEW YORK OFFICE: 30 Church St.
PITTSBURGH OFFICE: 915-916 Union Bank Bldg.
HAZLETON, PA., OFFICE: 705 Markle Bank Bldg.

try, is worth while. The following letters indicate the success that Bay City excavators have had on some plants.

J. Whitney Soisson, sales agent of the Jos. Soisson Fire Brick Co., Connellsville, Pa., writes:

"The excavator we purchased last summer from the Bay City Dredge Works has been very satisfactory and is giving excellent service. Our bank is 20 to 23 feet high at the present time and as we will work back it will be higher. It will dig a fairly hard clay.

"At the present time we shoot our clay but we are convinced that it would work a 10 or 12 foot bank without shooting. Ours is operated by one man, who loads the car, lets it run on a track to our clay chute, dumps the car and then by means of pulleys hauls the car back to the excavator point. On some days we have two other men on the bank cleaning up but not regularly. It will dig 250 yards of clay in ten hours, the engine is easily handled and fuel consumption is five gallons in eight hours."

Digs Clay for 32,000 Brick on 6 Gallons Gas

Leonard J. and Charles E. Scholl, Clio, Mich., have the following to say:

"We have been working in a nine-foot bank of hard, tough clay, and have delivered to the brick machine sufficient clay for a daily run of 32,000 brick with the excavator in operation about 50 per cent. of the time, with a fuel consumption of about six gallons of gasoline, and with a crew consisting of the operator and two cart drivers."

The Densmore Brick Co., Lebanon, N. H., in a letter signed by A. J. Densmore, manager, states:

"We have operated the machine since last August, and as far as the machine is concerned we are entirely satisfied. We have had some difficulty in holding the machine up on soft clay, but of course this is no fault of the machine. It will operate on an 8 to 12 foot bank, will dig a hard clay, requires one man to operate and one man as a handy man about the machine. It will dig enough clay easily to make 50,000 brick a day, and if a suitable method is used to take the cars away from the machine we have no hesitancy in saying that it will dig close to 100,000 brick in nine hours. The cost of running is very small, about one gallon of gasoline per hour, and a small amount of oil. The gasoline engine is a good one, has plenty of power and is as good as any gasoline engine that we have seen in this vicinity."



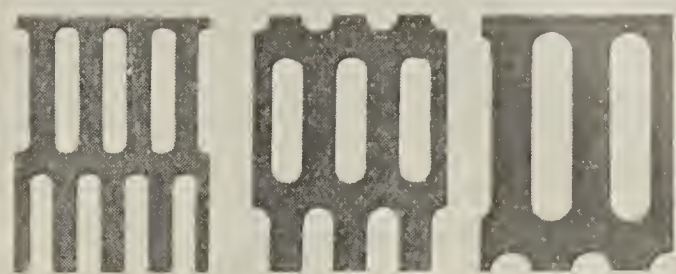
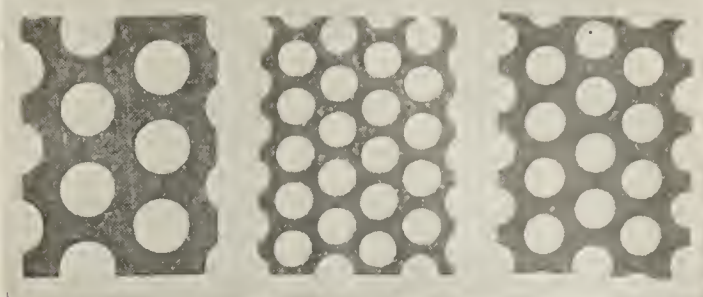
TRACTOR PROVES VALUABLE EQUIPMENT

The Brookville Truck & Tractor Co. says:

"Due to the fact that we have been running advertising with you for the past two or three years you probably are somewhat familiar with our product, same consisting of a small gasoline locomotive that we construct from the Ford ton truck power unit. When we originally started the construction of this machine we found the slow Ford reverse speed a serious drawback, making the locomotive but little more than 50 per cent. efficient. To overcome this matter we designed and patented a special auxiliary reverse transmission, this attachment by means of a gear shift giving the motor the standard Ford high and low speeds when operating either direction. As the machine now stands it is capable of making as high as four and five round trips per hour over one-half mile of track. Its maximum hauling capacity on the level runs from 15 to 25 tons, varying down to as low as four tons on a four per cent. grade.

"We make the claim, backed up by several years' experience on the part of a number of motors, that we have one of the best cost reducing articles, applying to the haulage end of the brick and clay industry, on the market today. This statement, of course, does not apply to every brick and clay plant, irrespec-

Perforated Steel Screens



For Screening Clay, Shale, Sand, Gravel, Stone and Cement

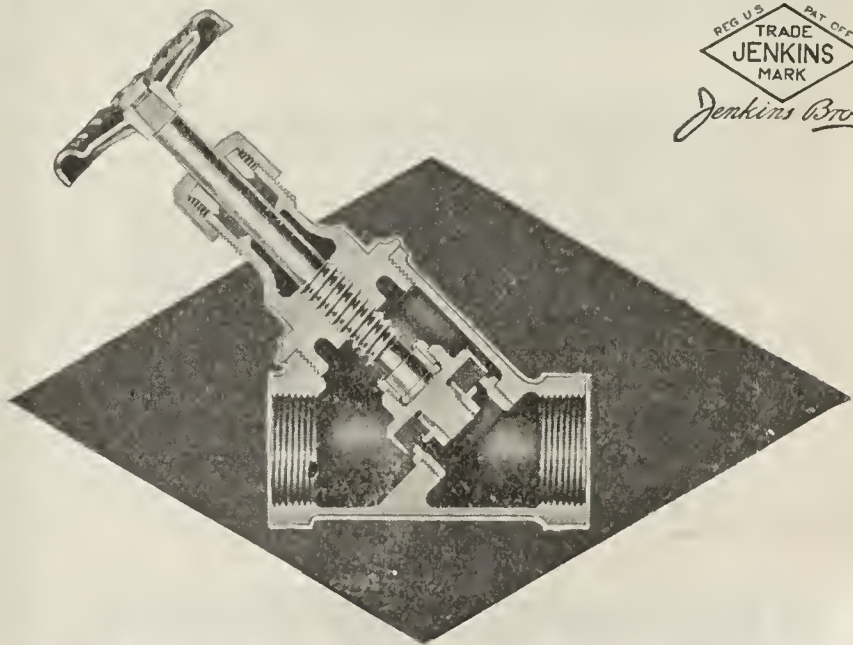
All sizes and shapes of holes in metal of proper thicknesses to give the best screening results.

Sheets furnished flat or rolled to shape for revolving screens.

THE HARRINGTON & KING PERFORATING CO.

635 N. Union Ave., Chicago, Ill.

NEW YORK OFFICE: 114 Liberty St.



Standard Brass Y or Blow Off Valve



Fig.
124

Free opening nearly in line with pipe allows free flow of steam and offers little resistance to heavy fluids. Used as blow off valve and in sugar refineries, chemical and dye works—places that require a valve to handle heavy liquids. Suitable for 150 pounds working steam pressure, or 250 pounds working water pressure.

JENKINS BROS.

New York Boston Philadelphia Chicago
Montreal London Havana

FACTORIES: Bridgeport, Conn.;
Elizabeth, N. J.; Montreal, Canada.

Jenkins Valves
SINCE 1864

17,000 Appraisals

(250 of Clay Working Plants)

during the past quarter century, qualify us to render you an unexcelled service in the valuation of your property for Insurance, purchase, sale, financial, accounting or Federal Tax purposes.

The American Appraisal Company

Atlanta
Baltimore
Boston
Buffalo
Chicago

Cincinnati
Cleveland
Detroit
Indianapolis
Los Angeles

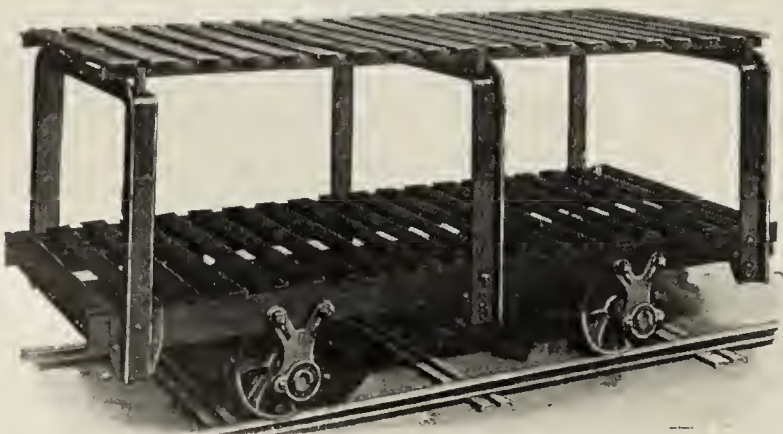
Milwaukee
New Orleans
New York
Philadelphia
Pittsburgh

St. Louis
San Francisco
Seattle
Syracuse
Tulsa

CAR INVESTMENT

It's not the first month nor the first year that counts in clay car investment. It's the years that follow. The standard of car performance which thousands of Robinson's have established, prove the intelligence of design and the quality of materials which are found in every long-lived Robinson car.

Your inquiry will bring full information immediately and without obligation. Write today.



FRANK H. ROBINSON

Dryer Cars and Clay Working Equipment
Kiln Bands Carried in Stock

FACTORY AND GENERAL OFFICE, PITTSBURGH, PA.

tive of load, grade, and daily tonnage conditions, but to plants having haulage propositions in the motors class. The machine positively has no competitor in the line of efficiency and economy.

"To bear out the above claims we are enclosing a number of letters from different brick plants.

What One Plant Thinks of Tractor

"The Fairchild Clay Products Co., Endicott, Nebr., write as follows:

"Will say in regard to the tractor we bought of you in 1920 that it has been busy most every day hauling clay to our plant, and is very satisfactory.

"A letter from the Dyson (S. C.) Brick Co., signed by W. S. McMillan, states:

"When your letter in regard to the working of the motor arrived on April 19, we had not used it enough to be able to say how it was going to work.

"We have been running this motor now for six weeks and after it was broken in, which took about three days, it has been giving us entire satisfaction.

"At present we do not have a grade and are hauling each trip only three 1½ yard cars. But we are satisfied that it will haul six if need be.

"We are very much pleased with the motor and are willing at any time to recommend same to any one for the same kind of work that it is doing for us.

"So far we have needed no repair parts, but we know that we will need some sooner or later and would like to have you tell us what parts to have on hand, that is, the parts that wear the quickest.

Save \$70 Monthly

"The Queen City Brick & Tile Co., Inc., of Cumberland, Md., has the following to say thru Wm. L. Hamilton, manager:

"We began using one of your trucks in December, 1919, in our brick loading department, and we have used it continuously to this date with much satisfaction. It does our work admirably, and the expense for maintenance and operation has been very low, and we can say that its work is worthy of investigation by any one desiring a light economical arrangement for industrial purposes.

"The Liberty Clay Products Co., New Castle, Pa., in a letter signed by P. A. Kanengeiser, says:

"Since the installation in April, 1920, of your Brookville trucks at our plant at Volant, Pa., we have realized a saving of \$70 per month in this department on labor expense alone.

"With the uninterrupted supply of raw material and subsequent increase in production, which we have been able to obtain, our plant shows a gain from 200 to 250 tons monthly over past performances.

Upkeep Very Low

"This little motor is hauling our required tonnage of 80 to 100 tons of shale per day, accomplishing this in less than five hours time. The expense so far has been only the oil and gasoline it uses.

"We believe this motor can do five times this tonnage if required, as we are using only one 1½ yard dump car. Heretofore we were kept busy 10 to 12 hours daily with horse and man to average 80 tons daily.

"We are very much pleased with the performance of this motor in every respect.

"We wish also to refer you to a write-up in your September 21, 1920, issue, entitled 'Kicking the Mule Off the Plant,' this data being furnished you by Mr. Nichols of the Trinidad (Colo.) Brick & Tile Co.

"Both the above firms furnish statistics covering increased tonnage, savings in dollars and cents, and so forth."

DUMP CARS PROVE TIME SAVERS

The following brief paragraphs give an idea of the performance of Weston dump cars:

One Weston Automatic dump car of two yards capacity delivered 200 tons of clay per ten-hour day on a haul of 300 to 500 feet. A three-fourths yard steam shovel loaded the car.

One Weston Automatic center dump car displaced two side dump cars and two men at a six-kiln plant.

At an Iowa plant switching troubles and expense were eliminated by means of one Weston Automatic dump car, which dumped its load and returned in about the time required to switch another car in.

Weston low dump cars make it possible to use larger and fewer cars, give less track trouble and reduce the cost of upkeep.

Two clay plants working clay from the same pit transport 400 tons of clay daily over a quarter of a mile haul in four four-yard capacity Weston Automatic dump cars.

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CUTS COSTS WITH "HURRICANE" DRYERS

Regarding "Hurricane" dryers the Philadelphia Drying Machinery Co., says the following:

"We are in receipt of your communication of November 28, regarding news items concerning manufacturers whom we have known to adopt improved methods recently for cutting their production costs. Just as your letter was received we were about to write you of the way in which one prominent electrical porcelain manufacturing concern in Ohio made a considerable improvement in drying equipment, making possible a greatly increased production at a much lower proportionate operating cost.

System Cuts Cost Considerably

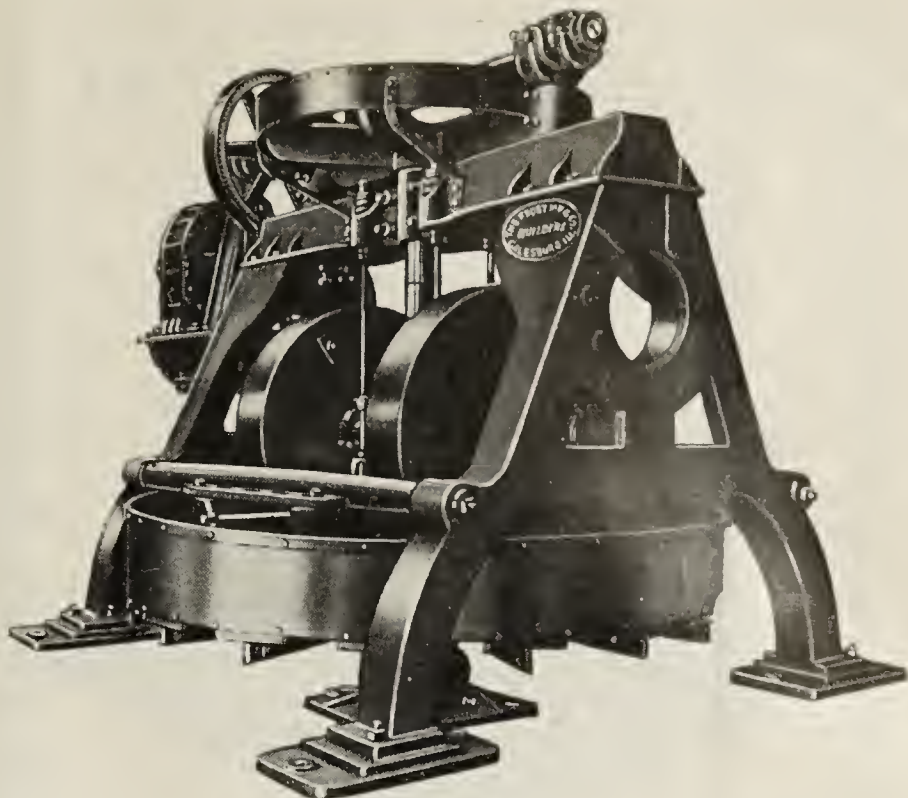
"The change was accomplished by the installation of two machines, designed and built by us, including a 'Hurricane'



A "Hurricane" Dryer Installation on a Clay Plant.

Automatic Conveyor type of dryer, used for handling clay rolls in the green state, and also a new special type of 'Hurricane' tunnel machine, known as the 'Stillage Dryer,' for dry press ware.

"The latter machine represents a new departure in drying



DO YOU KNOW?

That Frost Pans aim to give you the best quality of material, workmanship and fabrication that can be obtained.

SEND US YOUR INQUIRIES

THE FROST MFG. CO.

GALESBURG, ILLINOIS.

ESTABLISHED 1851



Continuous Performance With Very Slight Expense

That's the Marion Motto

The Marion Rust Special Feeder Mixer embodies all the good points of an entirely successful machine. It is a labor and time saver which will aid you in improving your ware and in cutting your production costs.

Take advantage of your opportunities, Mr. Clay Plant Owner. Save whenever and wherever possible. Write us today for complete information concerning all Marion Equipment for Modern Clay Plants.

No Obligation.

Marion Machine Foundry & Supply Co.

Box 395

Marion, Indiana

PEABODY COAL COMPANY

FOUNDED 1883

OPERATING 36 MINES
WITH ANNUAL CAPACITY
OF

18,000,000 TONS



GENERAL OFFICES:

332 SO. MICHIGAN AVE., CHICAGO

BRANCHES:

SPRINGFIELD, ILL.	PINEVILLE, KY.	OMAHA, NEB.
PEORIA, ILL.	CINCINNATI, O.	DEADWOOD, S. D.
ST. LOUIS, MO.	MINNEAPOLIS, MINN.	SPOKANE, WASH.
KANSAS CITY, MO.		SHERIDAN, WYO.

"PEABODY FOR SERVICE"

We Design and Manufacture CLAY WORKING DIES

for

**Hollow Ware, Fireproofing
Brick and Various Purposes
in Dry or Lubricating Styles**

ALSO A
COMPLETE LINE
OF—

**Piano Wire Screens, Hand Cutting
Tables, Friction Winding Drums,
Conveyors and Elevators.**

WE CAN SOLVE YOUR HARDEST PROBLEMS. WRITE TODAY FOR COMPLETE INFORMATION.

**The Louisville Machine
Manf'g Co.**
Louisville - - - Ohio

machinery of the 'heated-air re-circulating' type. The accompanying illustration shows the method of handling the dry press ware on a 'stillage' or rack, which is suspended from an overhead I-beam track, and transported between the various departments by means of an overhead trolley. In this manner, the pieces are loaded on the boards as they come from the press, placed on the stillage and run directly to the dryer and after the drying is completed, to the glazing department. The big advantage of this system over the truck system lies in the fact that the ware is not rehandled from the time it is pressed until it is ready to be finished, making an important reduction in labor cost.

"The shell of the dryer consists of the usual structural framework, enclosed with steel panels. These consist of two sheets of steel, with three layers of air-cell asbestos in between. The inside sheet is galvanized to prevent rusting. After much experimenting as to the efficiency of various types of panel enclosures for dryers, this type of construction has been found most effective in preventing the radiation of heat. By securing the proper temperatures with the least consumption of steam, the greatest economy is consequently obtained.

Use Exhaust Steam

"Four steel-blade, disc fans of large diameter maintain a steady re-circulation of heated air in the dryer, heat being provided by means of steam coils in the machine.

"The floor space required by the dryer is only 267 square feet. The amount of material handled in this space is remarkably high, from 75 to 300 boards of ware being turned out per day of ten hours, the output depending on the size of the pieces being dried. Exhaust steam, five pounds pressure, is being utilized on the steam heating coils, to accomplish thoro, uniform drying.

"From the above account it will be seen that the concern installing this equipment has made a big step in lowering their production costs, by substituting efficient methods in the place of less economical practice.

"We feel certain that an account of this advanced step in drying practice, appearing in the December 27 issue, would be of considerable interest and help to the clay manufacturers who read Brick and Clay Record for the purpose of getting new ideas in 'cost cutting' methods."



AUTOMATIC STOKERS ARE GREAT SUCCESS

These letters were received by the CoKal Stoker Corp. from companies using their equipment. One from The Ross Clay Products Co., Uhrichsville, Ohio, reads as follows:

"Replying to your favor of November 7, wish to advise that we have used your stokers for the past eight months and find the same to be a great improvement over any other grate that we have used.

"Previous to the time we installed the CoKal stokers it was necessary that we use nothing but lump coal. Now we are using slack and machine cuttings which we formerly had to waste, and at the same time reducing the amount of coal consumed and getting a greater amount of power than we were heretofore able to obtain.

"We have not had a single steam failure since we have been using the CoKal stokers. We also find that on account of not having to clean fires the old way our firemen are very much in favor of the stokers and have plenty of time to attend to other duties which are sometimes neglected by the firemen."

Stoker Makes for Satisfied Engineers

The Merrick Brick Co., Inc. of Syracuse, N. Y., express themselves as follows:

"The CoKal stoker has taken the 'damn' out of the engineers'

that the great majority of clay plants in the United States and Canada cannot afford continuous kilns because of their lack of working capital, but there is a considerable percentage who at present are equipped with down-draft kilns, who can save many thousands of dollars a year by the installation of the continuous kiln, producer gas fired, either of the tunnel or the compartment type.

"You, of course, understand that it is always very hard to get a comparison in fuel saving on a brick plant, because either the average plant has a continuous kiln with no down-draft kilns, or all down-draft kilns, it being very hard, therefore, to compare one plant working on a certain clay with down-draft kilns against another plant working on a different clay with continuous kilns.

Continuous Kiln Effects a Great Saving

"While we could point to a very low fuel consumption on many plants using our tunnel and compartment producer gas fired continuous kilns, yet we have only several that have down-draft kilns and continuous kilns on the same yard, hence we are enclosing you copy of letter from the Hankinson Brick Co. of Augusta, Ga., signed by Thos. H. Stafford, secretary, which shows a 75 per cent. fuel saving on the same yard, with the installation of one of our gas fired continuous tunnel kilns as compared with their down-draft kiln.

"We have been operating one of your Youngren gas fired continuous kilns for the past ten years. We are making and burning common building brick which weigh about five pounds when burned. Our records show that it takes 190 pounds of coal for each thousand brick burned, and we get fully 95 per cent. hard brick. We attribute this, of course, to the application of gas and continuous effect of your kiln.

"Your kiln saves for us more than 75 per cent. of the fuel that we use in burning our round down-draft kilns, and we unhesitatingly recommend it over all others."

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TO BUILD NEW PLANT AT WINCHESTER, VA.

A new brick corporation has been organized at Winchester, Va., consisting entirely of local men, to erect a plant on the Smithfield farm near that city. Frank A. White, an experienced brick man, was elected president, H. B. McCormac, vice-president, and G. M. Hansbrough, secretary and treasurer. The board of directors numbers some of the most influential men of the town.

First mortgage bonds to the amount of \$35,000 will be issued by the company. These bonds will be a first lien on the 20 acres of land to be purchased for cash and upon the plant erected thereon.

Because of the high freight rates on brick, the cost of building in Winchester has been constantly increasing, and it was felt by the promoters of the new project that a local brick plant would relieve this situation. Mr. White has carefully estimated the demand, and his investigation will govern the size of the plant. He also plans to turn out hand-made colonial brick, which cannot be purchased elsewhere and for which there is a demand by architects for strictly colonial buildings.

Ontario Potteries, Ltd., Bowmanville, will erect a plant to cost \$50,000.

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CONTINENTAL DRAWS PLANS FOR NEW PLANT

The Continental Clay Co., Zininger Building, Canton, Ohio, has plans under way for the erection of its proposed new plant in the East Canton district, for the manufacture of sewer pipe and other burned clay products. The works will consist of a number of buildings, with main one-story structure, 100x300 feet. The plant, with machinery, is estimated to cost close to \$250,000.



Distance Is Eliminated

Where STANDARD CONVEYORS are used there is no such thing as distance.

The slow and costly methods of manual handling are abolished. Common labor costs are cut to the minimum and skilled laborers are kept busy. There is no more delay waiting for materials.

And remember this is all done by GRAVITY—the universal FREE power. Decide today to take advantage of it.

Write for complete information.

STANDARD CONVEYOR CO.

NORTH SAINT PAUL
MINNESOTA

Reduce Your Costs

By

PREMIUM COAL

because of its excellent quality and preparation is suited equally well for every use around the clay products plant—

- for burning down-draft kilns
- to use in kiln furnaces
- for making producer gas
- to use with automatic stokers

The HIGH HEAT CONTENT—LONG FLAME as well as the LOW ASH and LOW SULPHUR CONTENT are the basis of this fact. PREMIUM COAL DOES NOT CLINKER.

Mined in a district shipping the highest heat unit coal mined in Illinois.

Daily Capacity
10,000 Tons

Tell us your requirements

Big Creek Coal Inc.
Chicago

OMAHA

MINN.

"BIG CREEK"

For Years Has Stood For

QUALITY
and
SERVICE

Machinery and Equipment

Descriptions of Machinery and Accessories and Detailed Announcements That Our Advertisers Believe Will Interest Our Readers

EXPERIENCE—SAFEST GUIDE

Experience is the safest guide in the selection of machinery and if you have the opportunity to profit by the experience of another clayworker, so much the better.

The Bonnot Co., Canton, Ohio, in a recent letter to the trade, enclosed copy of a testimonial from The Metropolitan Paving Brick Co., O. W. Renkert, Vice-President and General Manager, telling what the Bonnot No. 20 Machine is accomplishing for them. The letter follows:

"You no doubt will be interested to know that our No. 20 Fireproofing Machine, which we installed at our Minerva Plant, October, 1917, has given us absolutely no trouble or expense since its installation, except replacement of augers and rebabbing of thrust bearings. The machine has only been out of operation for six months since October, 1917, and has an average of 120 tons per day to its credit for every day it operated. We are able to produce this tonnage in from seven to eight hours, depending upon the size and kind of ware we are running.

"The exceptional large thrust bearings has eliminated thrust trouble from the machine; the circular tapering adjustable liners has enabled us to keep liners fitted up close to the augers, and are features of exceptional merit in the machine.

"The attention you have given details such as the machine fitting of all joints, as well as the general workmanship on the entire unit is what in our opinion makes this machine so satisfactory in every way. We know of nothing better for a machine of this size and capacity."

This No. 20 Auger which can be used for either brick or hollow ware by making minor changes, is particularly designed for the clay products manufacturer who has need to change his product to meet market conditions.

The same general design is followed in their No. 21 Auger machine for smaller capacity.

* * *

NEW DRAG LINE EXCAVATOR

J. C. Steele and Sons., Statesville, N. C., well known as manufacturers of clayworking machinery, have made an addition to their line—a drag line excavator, which can be purchased at a comparatively inexpensive figure.

This machine is designed for digging clay and loading on cars, without the necessity of having machine or clay cars in the pit. This is extremely important and is perfectly



Steele Drag Line Excavator.

accomplished, as the excavator and the cars are always on top of the ground.

It is adapted for wet clay holes, where water backs up, for obvious reason that both machine and cars are always above surface level.

Another very important feature is, the machine, unlike a steam shovel, will dig with an uneven bottom in pit; will dig forty feet deep, or step over a sand bar or rock, taking all the clay and leaving material not wanted.

When the clay is all removed from the space covered in one setting, the machine is easily and quickly skidded on cross timbers, thrown on ground, to a new position. The machine rests on these timbers while working. The moving is accomplished by means of tackle block with dead man, and the use of winch headon engine. You will note it always moves in direction from the place excavated, as the place excavated is from sixty to seventy feet in width, and twenty-five feet in direction of machine, the moving of machine and of the car track is done at much longer intervals.

If the clay is extremely hard and dry, it is sometimes advisable to use a special plow to break up the clay. The bucket is easily swung aside and the plow hooked on in the same manner as bucket, when plowing can be done, and usually without loss of time, while the car is gone.

This machine has been perfected, having been in continuous use for two years, at this time; is very economical to operate, extremely substantial and reliable. It requires only one man to operate, except where loading continuously.

It is made in $\frac{5}{8}$ yd. and 1 yd. size.

* * *

A NEW GASOLINE REVOLVING SHOVEL

A gasoline operated shovel with no engines, motors, shafts, chains or gears on the boom and yet with an actual digging power greater than a steam shovel of the same size is the most recent innovation in the manufacture of excavating machinery. Such a shovel has recently been announced by the Bucyrus Company of South Milwaukee, Wis.

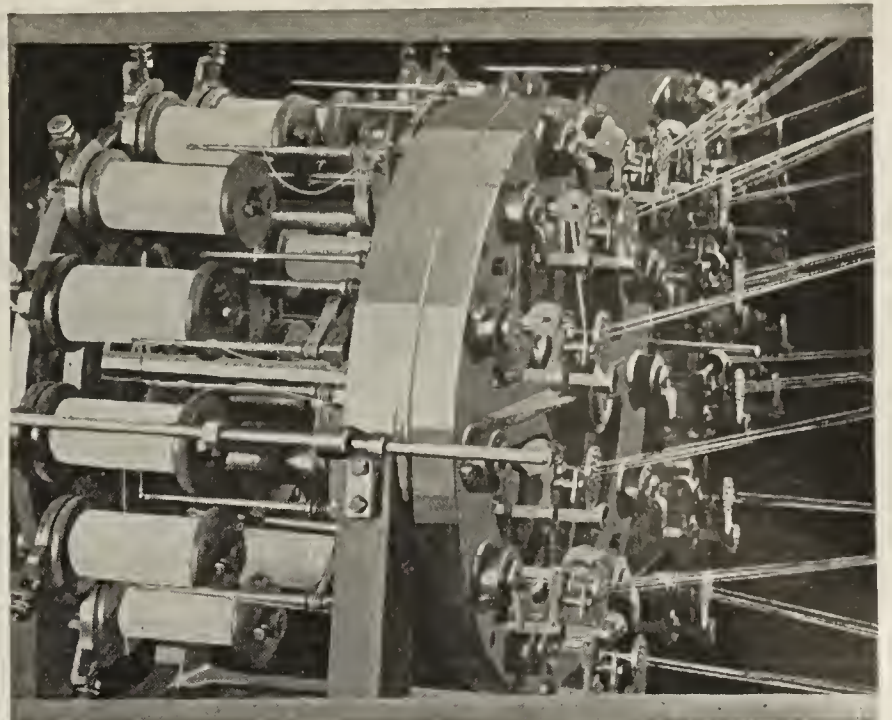
This machine, which is known as their 30-B gasoline shovel, marks a distinct advance in the design of excavating machinery. For more than ten years Bucyrus dragline excavators have been operated by gasoline engines, but the application of this power to the revolving shovel involved more difficult and intricate problems, chief among these being the efficient transmission of power to the thrust without excessive complications in design, and the obtaining of digging power commensurate with that of a steam machine of similar size.

Both of these problems have been satisfactorily solved in this new shovel. Furthermore, the manufacturers have succeeded in obtaining in this new machine the digging characteristics of the steam shovel with its quick reversals, its powerful thrust of the dipper and its dependability.

Before being put on the market, this shovel was used for a period of six months for overcasting and loading dump cars in sticky clay, for grading for a concrete road where the cut averaged five inches in old macadam, and for stripping a



New Bucyrus Gasoline Shovel.



Quality Is Built Into Every Foot of Gandy Belt

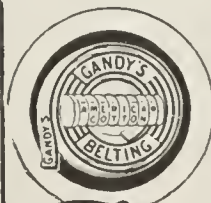
THE heavy thread used in stitching the plies of a Gandy Belt is tight-twisted on special machines right in the Gandy factory. It is made extra heavy, hard and strong to give additional wearing quality to the finished product.

Back in 1880, Gandy was the first and original stitched cotton duck belt ever made. Since that time many imitations have sprung up, but manufacturers have never been able to duplicate the methods and workmanship which are the basis of the longer wear, higher quality and better service found in Gandy Belt. Even such small detail as the twisting of sewing twine has important bearing on the service you receive from Gandy.

In the brick and allied industries particularly, Gandy Belting has proved its ability to withstand rough treatment. On main drive, belt conveyor and elevator; in grit and dirt, indoors and outdoors, it is the best all-purpose belting you can buy.

There is a Gandy dealer near you. Equip with Gandy Belting. Look for the green edge, the Gandy name and the Gandy trade mark.

THE GANDY BELTING CO.



MAIN OFFICE AND FACTORY
732 W. PRATT ST. - BALTIMORE, MD.

NEW YORK: 36 WARREN STREET
CHICAGO: 549 WEST WASHINGTON STREET

GANDY

STITCHED COTTON DUCK

BELT



Here's one Clay Plant Operator who really has Cut his Pit Costs

Read this letter from Mr. Hill of the Albert W. Hill Co., Coatsworth, Ont.

"I am enclosing a photo of my Bay City Clay Digger with a twelve horse power direct current motor which costs me practically nothing for power as I generate the current with the same gas engine that drives the fan for my dryer. I am getting plenty of clay with a perfect mixture from one man and the digger which I could not get with hand labor. I am well satisfied with the Bay City Clay Digger."

This plant is one of many plants with a capacity of 25,000 to 100,000 brick per day which are successfully winning their clay by this method. The One Man Excavator has taken its place in this day of high labor and freight rates as the most efficient and economical method of speeding up production in smaller plants.

The One Man Excavator is simple, dependable, and will operate in rain or shine. Driven by gasoline or electric power and will displace a dozen men from the pit. No other machine like it on the market.

Write for full information

Bay City Dredge Works
Bay City, Michigan

stone quarry and loading trucks in a stiff hardpan containing many boulders.

Its unqualified success, therefore, has been completely demonstrated by actual test in the field.

The outstanding features claimed for this shovel may be summarized as follows:

It is far simpler than a steam, electric or other types of gasoline shovels and has fewer parts to maintain and keep in order.

Its digging power is even greater than a steam shovel of the same size.

The shovel carries a 1-yd. dipper.

It has all the well known performance characteristics of a steam shovel, even to the shaking of the dipper to relieve it of sticky material.

It will give 20 per cent. greater yardage per gallon of gasoline than an electric shovel of the same size, or than any other type of shovel whose power is derived from a gasoline engine. This is due to less mechanical losses and less waste energy.

The gasoline engine with which this shovel is equipped is over twice as heavy and rugged as the type of commercial gasoline engine sold for this purpose. It was designed especially for this shovel from specifications offered by the Bucyrus engineers and consequently it is suited for the exacting requirements of this unusually severe service.

It is entirely inclosed and thus dustproof, a feature of much importance for excavating work.

The engine is a four cylinder, slow speed type and will develop 55 H.P. at a speed of 400 R.P.M.

This machine may be equipped as a dragline excavator, a crane or a clamshell machine with simple changes which may be made in the field.

The 30-B gasoline shovel fills a long-felt want, for those whose work is in arid regions or where coal is scarce and expensive and feed water of poor character.

A bulletin has recently been issued describing and illustrating this machine in detail which may be obtained by writing the Bucyrus Company, South Milwaukee.

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INTERNATIONAL EQUIPMENT

Brochure No. 25 recently issued by the International Clay Machinery Co., Dayton, Ohio, is a very excellent piece of work from a printing standpoint, and it is unique among

machinery catalogs in that in addition to featuring the regular line of clayworking equipment, it also deals with kiln cars and other equipment for railroad tunnel kilns.

The company maintains a complete clay testing department for the convenience of customers—a small fee being charged for each test to partially pay the expense of the testing room. Burned samples and a complete report of the engineer are returned to the customer.

A copy of this brochure will be sent on request.

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ROBINSON ISSUES SUPPLEMENT TO CATALOG

Bulletin No. 1, just issued by Frank H. Robinson, Pittsburgh, Pa., is a supplement to their No. 12 catalog. In it are illustrated the new types of cars tending toward heavier construction, which they are now offering. The general interest of clay products manufacturers will undoubtedly be awakened by these new cars.



BRICK *and* CLAY RECORD

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JUL 14 1921

Years of experience have proven that

DRESSLER MUFFLES

control and conserve heat, giving

"The Kiln of Sure Control"



American Dressler Tunnel Kilns, Inc., 1740 East Twelfth Street, Cleveland, Ohio

Vol. 59, No. 1

Chicago

July 12, 1921

Published Every Other Tuesday at 610 Federal Street, Chicago. Subscription Price \$3.00 per year. Entered as Second Class Matter January 2, 1911, at the Post Office at Chicago, Ill., under the Act of March 3, 1879.

THE NEW BELT

THE THERMO-GANDY BELT

- ① Is impervious to water, and unaffected by most chemicals and fumes met in industry.
- ② Maintains its character operating in temperatures up to 300° F. and, when specially prepared, at higher temperatures.
- ③ Presents a hard, flexible surface giving great driving traction, and dependability on unusual conveyor installations.
- ④ Eliminates stretch troubles.
- ⑤ Is economical in manufacture and superior to any belt now made for similar purposes.

The base of the Thermo-Gandy belt is the original Gandy stitched cotton duck belt, world's standard since 1880. It is specially prepared and impregnated with a black mineral treatment of special composition. It is distinctly superior to any other high-temperature belt so far developed.

Write us the special conditions in your plant and we will give you full information on the new Thermo-Gandy belt in relation to your transmission or conveyor problems.

THE
GANDY
BELTING COMPANY

MAIN OFFICE AND FACTORY
732 WEST PRATT STREET BALTIMORE, MD.
NEW YORK: 36 WARREN STREET
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THERMO-GANDY

Impregnated Stitched Cotton Duck

SPECIAL BELT

"HURRICANE" DRYERS

For CLAY and PORCELAIN



Tunnel Truck Dryer for Insulators



Feed End Automatic Stove Room



Delivery End Automatic Mangle

Low Drying Cost with Better Ware

Actual Performance has proved that "Hurricane" Dryers meet every drying requirement in the ceramic field—at low operating and maintenance expense, with less cracked ware and more uniform results.

Correctly applied engineering principles, backed by 30 years' actual drying experience, readily accounts for the dependable construction and operation of "Hurricane" Dryers.

Automatic temperature and humidity apparatus insures absolute control over the conditions in the machines, and safeguards against over-, or under-drying.

Let us show you how "Hurricane" Dryers will fit into your process.

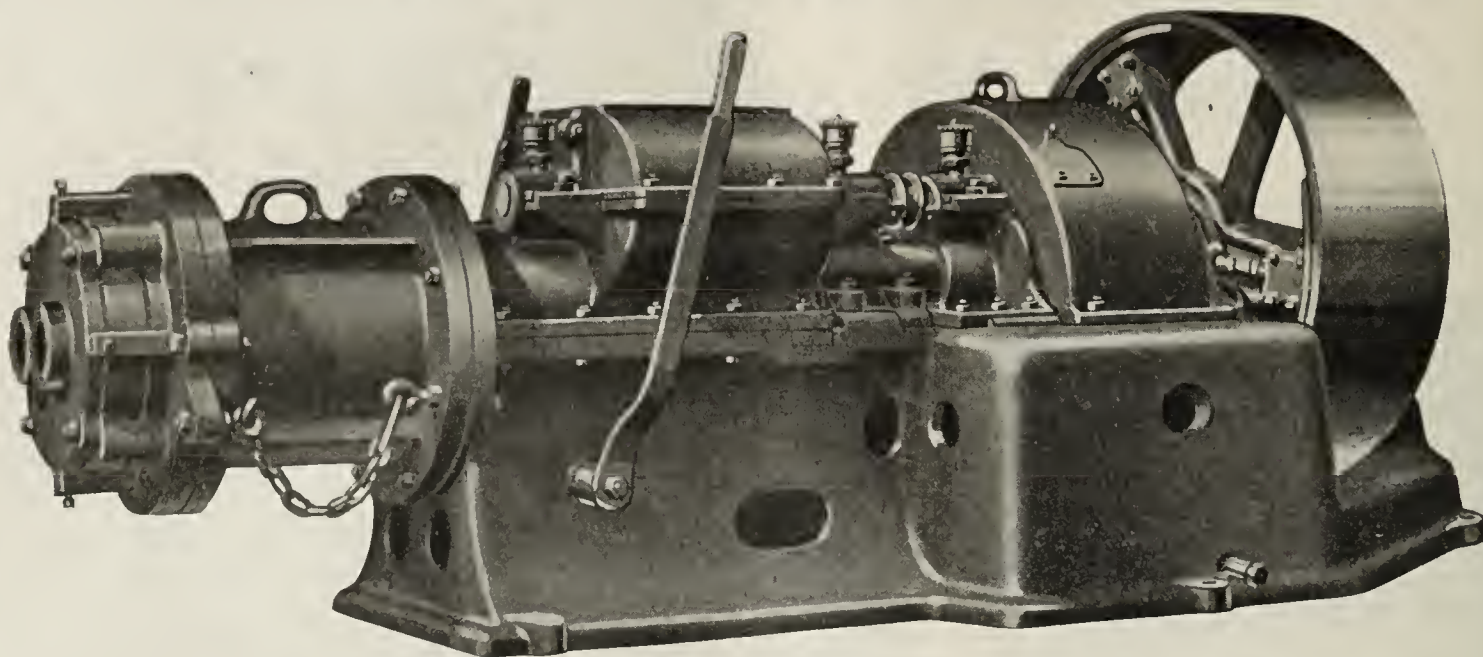
Truck and Automatic Systems for

China Ware	Abrasives	Pottery
Spark Plugs	Clay Rolls	Tiles
Sanitary Porcelain	Saggers	Terra Cotta
Electrical Porcelain	Hollow Ware	Glass Pots

The Philadelphia Drying Machinery Co.

3351 Stokley St., Philadelphia, Pa.

No. 21 AUGER MACHINE



BONNOT MACHINERY

MEANS

ECONOMY FOR YOU

Reduction of inventory, and low operating costs are the goals of all manufacturers during the present re-adjustment period.

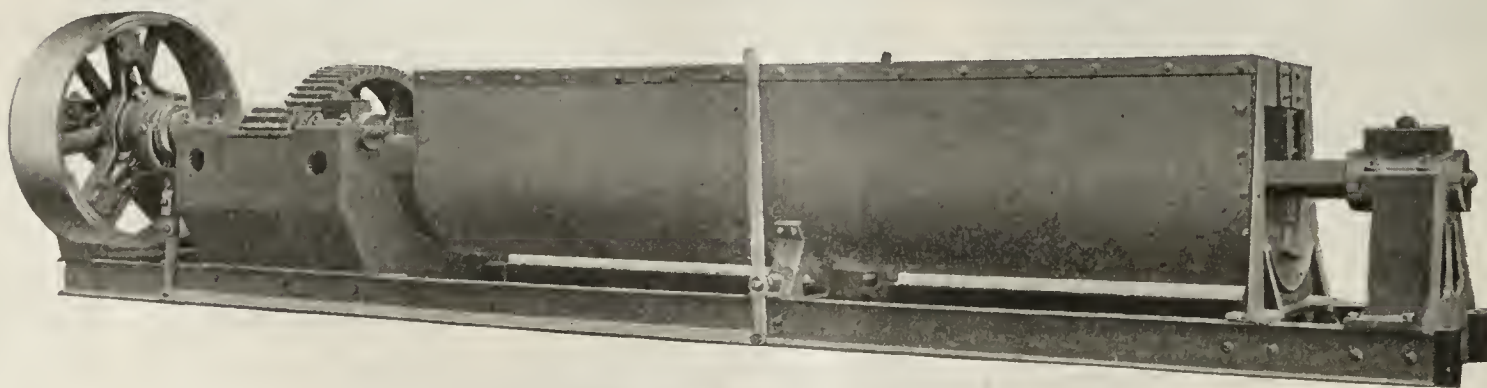
A BONNOT "Standardized" plant will mean a minimum number of repair parts in stock—and a similar minimum of use for them.

Dollar for dollar you get the most value for your money when you buy BONNOT equipment. Service is built into every part and no essential feature is overlooked.

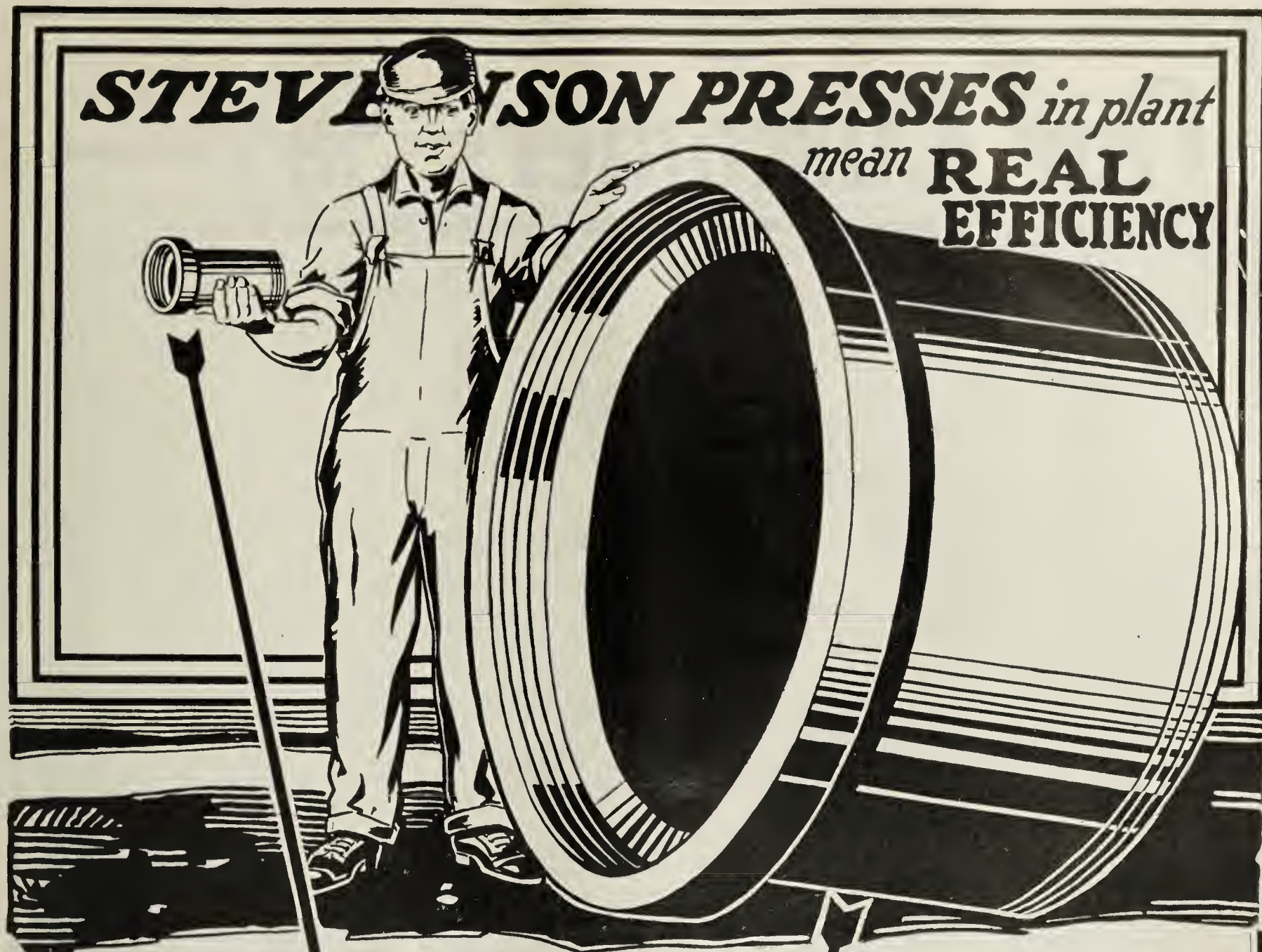
For the manufacturer who wants the best—because it is the most profitable investment—we offer a complete line of clay working machinery.

Write for a catalogue

THE BONNOT COMPANY, CANTON, OHIO



STYLE "E" PUG MILL



STEVENSON PRESSES *in plant*
mean **REAL**
EFFICIENCY

Range of
Socker Pipe
Made on

3" **Green Sizes** To 42"

**STEVENSON
PRESSES**

**Our New Hand Operated
PIPE TURNER**

Is Now Ready—"You Need It"

**DRY PANS
WET PANS
ROLL CRUSHERS
ELEVATORS**

**SEWER PIPE PRESSES
TILE PRESSES
PIPE TURNERS
PRESS FEEDERS**

Bulletins on request.

THE STEVENSON COMPANY

**GENERAL OFFICES
AND
WORKS**

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**Western Sales & Engr. Office
801-802 MONADNOCK
BUILDING**

Chicago - - - Illinois

Our Customers Say—

CHAS. S. SHULTZ

WALTER C. SHULTZ

CHARLES S. SHULTZ & SON

MASON'S BUILDING MATERIALS

OFFICE: 95 RIVER ST., HOBOKEN, N. J.

YARD: 18TH ST. AND WILLOW AVE., WEEHAWKEN, N. J.

TELEPHONES 855
HOBOKEN 2999

February 3rd, 1921.

Lancaster Iron Works,
Lancaster,
Pennsylvania.

Gentlemen,—

For your information we can advise that the Martin Steam Dryers which you installed for us have proved to be all that you represented.

At our Hackensack, New Jersey Plant the former capacity was 4,000,000 brick per year. Your Dryer was completed there on January 31st, 1920 and from that time until January 29th, 1921 inclusive, 10,535,000 brick were manufactured.

At our Kingston, New York Plant, the Dryer was completed on May 19th, 1920, and from that day until December 16th, 1921 when we closed for the season, there were 7,291,500 brick turned out by your Dryer.

We are pleased to add that the quality of the brick manufactured at both plants has greatly improved.

Very truly yours,

Chas. S. Shultz & Son,

By *Walter C. Shultz*

Prominent Brick Manufacturers from the North, South, East and West will tell you how well satisfied they are with our Material, Workmanship and Service.

We specialize in the manufacture of "Arnold-Creager" and "Martin" Brick Machinery and Supplies.

Brick Machines
Pug Mills
Winding Drums
Granulators
Disintegrators
Crushers
Mold Sanders

Pipe Rack Dryers
Cable Conveyors
Rotary Dryers
Sand Dryers
Sand Grinders and Sifters
Transfer Cars
Dry Brick Cars

Molds
Barrows
Trucks
Tanks
Stacks
Kiln Irons
Represses

Lancaster Iron Works, Inc.

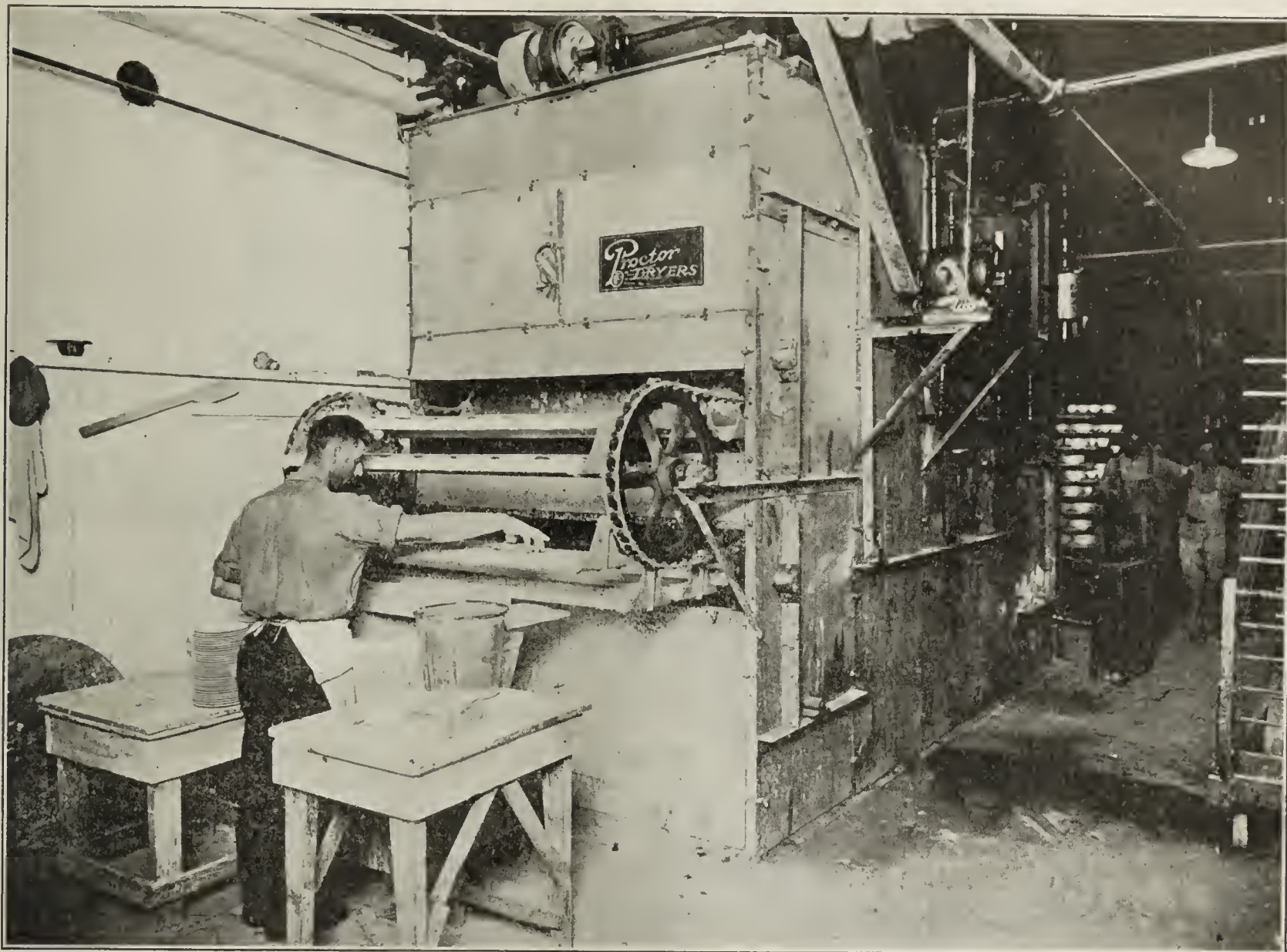
Lancaster, Pennsylvania

Successors to The Arnold-Creager Co., New London, Ohio. Originated 1877.

Brick Machinery Department
JAS. P. MARTIN, Mgr.

Manufacturers of "Martin"
Brick Machinery, Lancaster, Pa., Originated 1858.

Better Drying for Dipped Ware



Installation—"Proctor" Automatic Mangle—Shenango Pottery Co.

DRYING dipped general ware, the "Proctor" Automatic Mangle is vastly better for the product and for production. Thus it satisfies at once the two strongest tests of value applying to plant equipment.

Better for the product, the "Proctor" gives uniformly perfect drying of dipped ware—an always firm surface that best resists scarring in handling. No hands touch the moist ware from the time the dipper places it on the automatic conveyor until it is delivered, perfectly dry. Consequently, there's no finger-marking or rubbing.

Better for production, the "Proctor" makes drying a continuous process, requiring only 30 minutes—even less, in many cases. It automatically regulates the rate of dipping. It gives a dependable schedule to keep pace with the kilns. Its great saving in time, space and labor are decidedly profitable.

PROCTOR & SCHWARTZ, Inc.

formerly The Philadelphia Textile Machinery Company
PHILADELPHIA

"Proctor"
DRYERS

Branch Offices:

PITTSBURGH

NEW YORK

CHICAGO

PROVIDENCE

Schofield-Burkett Excavators

FOR

**Speed, Efficiency
& Durability**



SCHOFIELD-BURKETT EXCAVATORS are built from the clay plant operator's point of view.

The modern clay plant requires reliable machinery in every department, especially in the pit. For the gathering of the clay or the removing of the overburden an efficient and economical machine is needed.

The answer is THE SCHOFIELD-BURKETT EXCAVATOR. It is designed by engineers who have spent many years in the study of these requirements. Only skilled mechanics who realize the necessity of making machinery sturdy and reliable are allowed to even so much as touch a wrench to a SCHOFIELD-BURKETT.

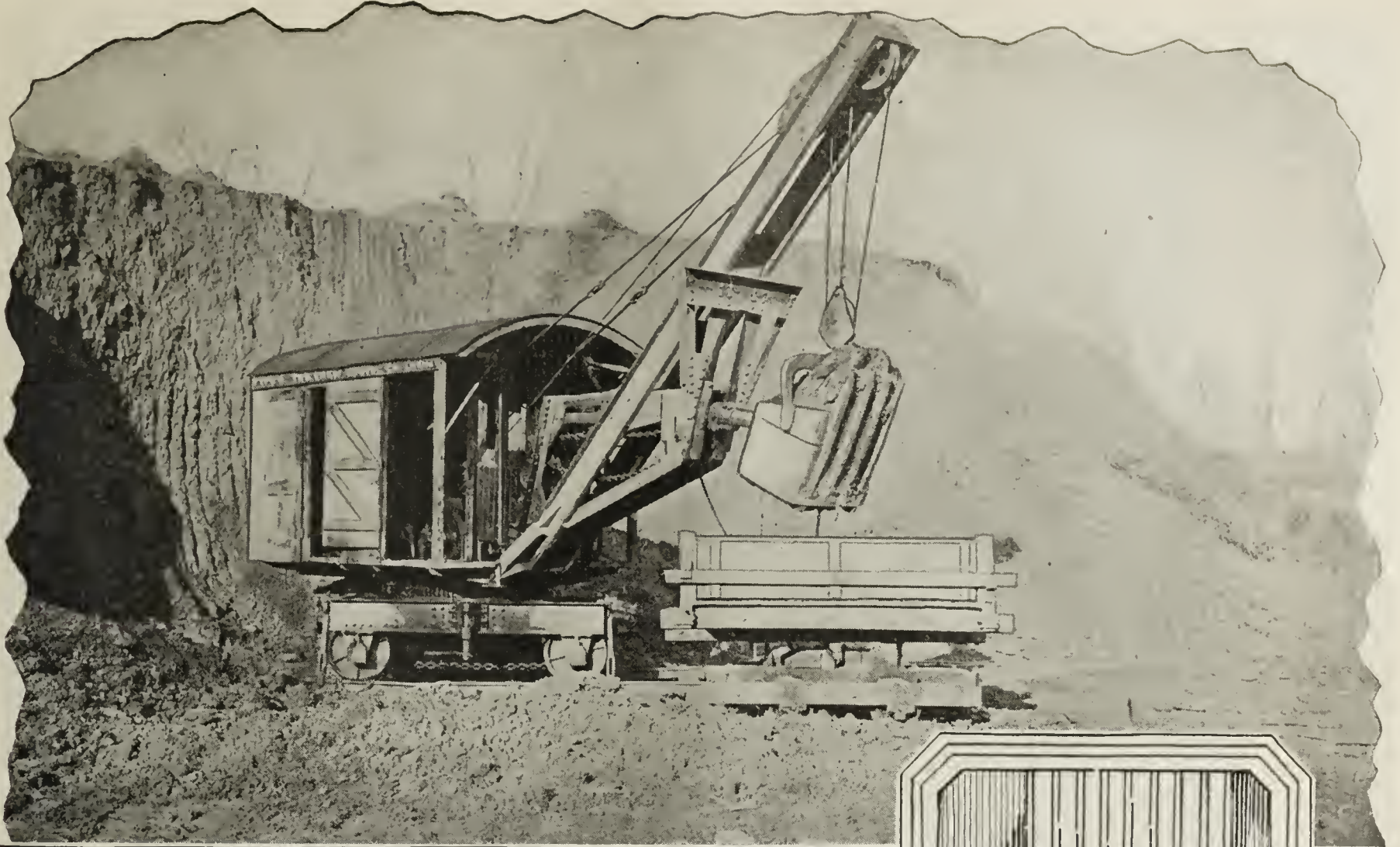
If you are having trouble in your pit, write to us and let us send one of our engineers (without charge or obligation) to you. He will explain just what the SCHOFIELD-BURKETT will do for you.

Don't Delay—Do It NOW.

Schofield-Burkett Construction Co.

MACON

GEORGIA



Results

THIS Thew Electric Shovel is working at a twenty-five foot clay bank, digging, mixing and loading enough clay to produce 100,000 brick daily.

When you put a Thew shovel at the bank with one good reliable man operating it, you can forget your material troubles. Your clay or shale is going to come in to the mill as fast as you need it and at lower cost.

Write for Thew results in the brick industry.

THE THEW SHOVEL COMPANY
LORAIN, OHIO

EXPORTS: BENTONITE
ALLIED MACHINERY COMPANY OF AMERICA
OF NEWARK, N. J. - LORAIN, OHIO - NEW YORK



Thew Power Shovels

BUCYRUS

IS YOUR DIGGING



AS HARD AS THIS?

If it is, you need a Bucyrus to insure continuous operation of your plant.

If it isn't, you are definitely assured of steady, dependable output day after day. This means the most efficient use of all your equipment with the lowest possible production costs.

The Bucyrus 30-B shown above is going through solid sandstone, digging a road to a clay pit in California.

Bucyrus Revolving Shovels have the surplus strength and power to give this kind of service in your plant.

Send Now for Bulletin C-B

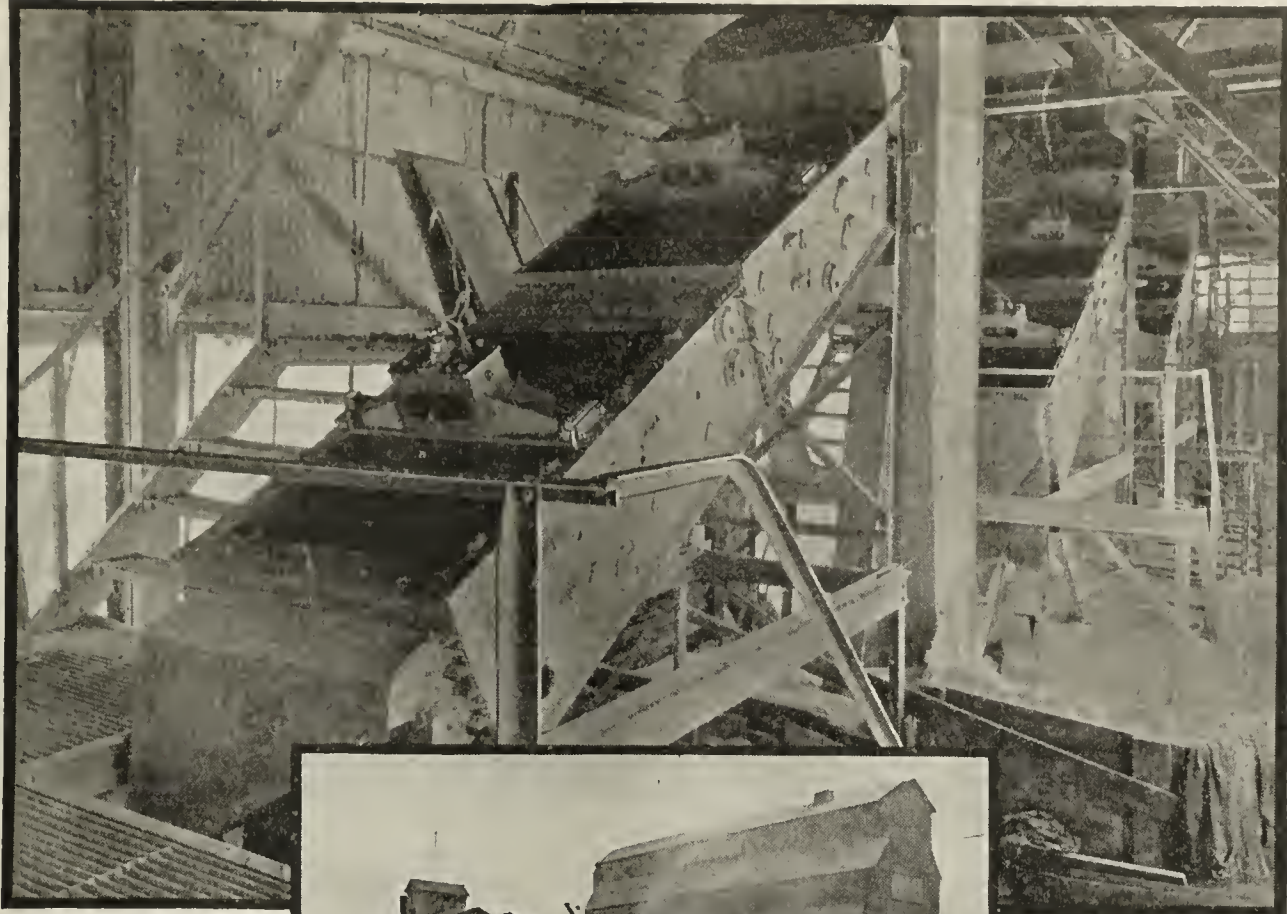
BUCYRUS COMPANY

SOUTH MILWAUKEE, WIS.

New York	Birmingham	Minneapolis	Denver	Portland, Ore.
San Francisco	Salt Lake City	Pittsburgh	Richmond, Va.	

359

SOUTH MILWAUKEE, WISCONSIN, U.S.A.



*Installation of six
HUM-MER Electric
Screens at plant of
Summit Silica Co.*



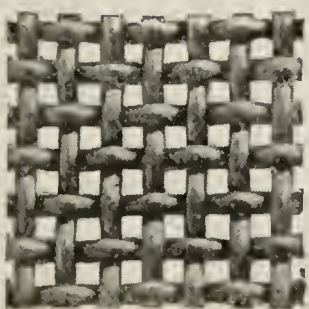
Six HUM-MER *Electric* Screens Operating Day and Night Since March, 1920

Report submitted by
J. E. RUCK, Gen. Mgr.

The Summit Silica Company

"We have had six HUM-MER Electric Screens in operation night and day since the middle of March last year (1920), and we are very much pleased with them.

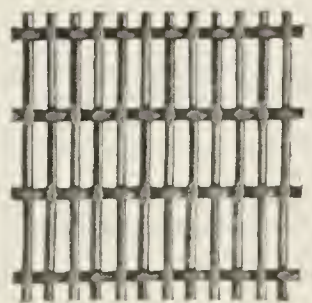
"The up-keep is small and no other style of screen which has ever come to our notice produces a material so well graded as the HUM-MER."



The Hum-mer Electric Screen can be used to screen any material—wet, damp or dry. Send for Catalogue No. 42-B.

THE W. S. TYLER COMPANY
CLEVELAND, OHIO

Manufacturers of Woven Wire Screens and Screening Equipment



Raw Clay and Finished Products Handled by B-G Conveyors

The problem of one brick company was to find the most economical and speedy means of loading their industrial cars with the raw material in the field. A Barber-Greene Portable Belt Conveyor was adapted to the conditions as shown.

Another company wished to save money and speed up the loading of tile. They accomplished this by installing a B-G Portable Belt Conveyor. Fifteen men now load a car with 24,000 tile in 2½ hours. Under the old method, twenty men could not accomplish the same work in less than eight hours.

B-G machines can be adapted similarly to the varied material handling problems of any clay products plant. B-G Engineers, located in most principal cities, can show you how B-G Conveyors will apply to your particular problem. This engineering analysis service is free, putting you under no obligation.



*Details are
available in
Catalog C.
Ask for it today.*



Barber-Greene Company

AURORA, ILLINOIS, U. S. A.

BRANCH SERVICE AND SALES OFFICES

New York
Philadelphia
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San Francisco
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Seattle

Canadian Agents: Mussens Limited, Montreal, Winnipeg, Toronto, Vancouver

*Export Dept.: Allied Machinery Company of America
51 Chambers Street, New York City*

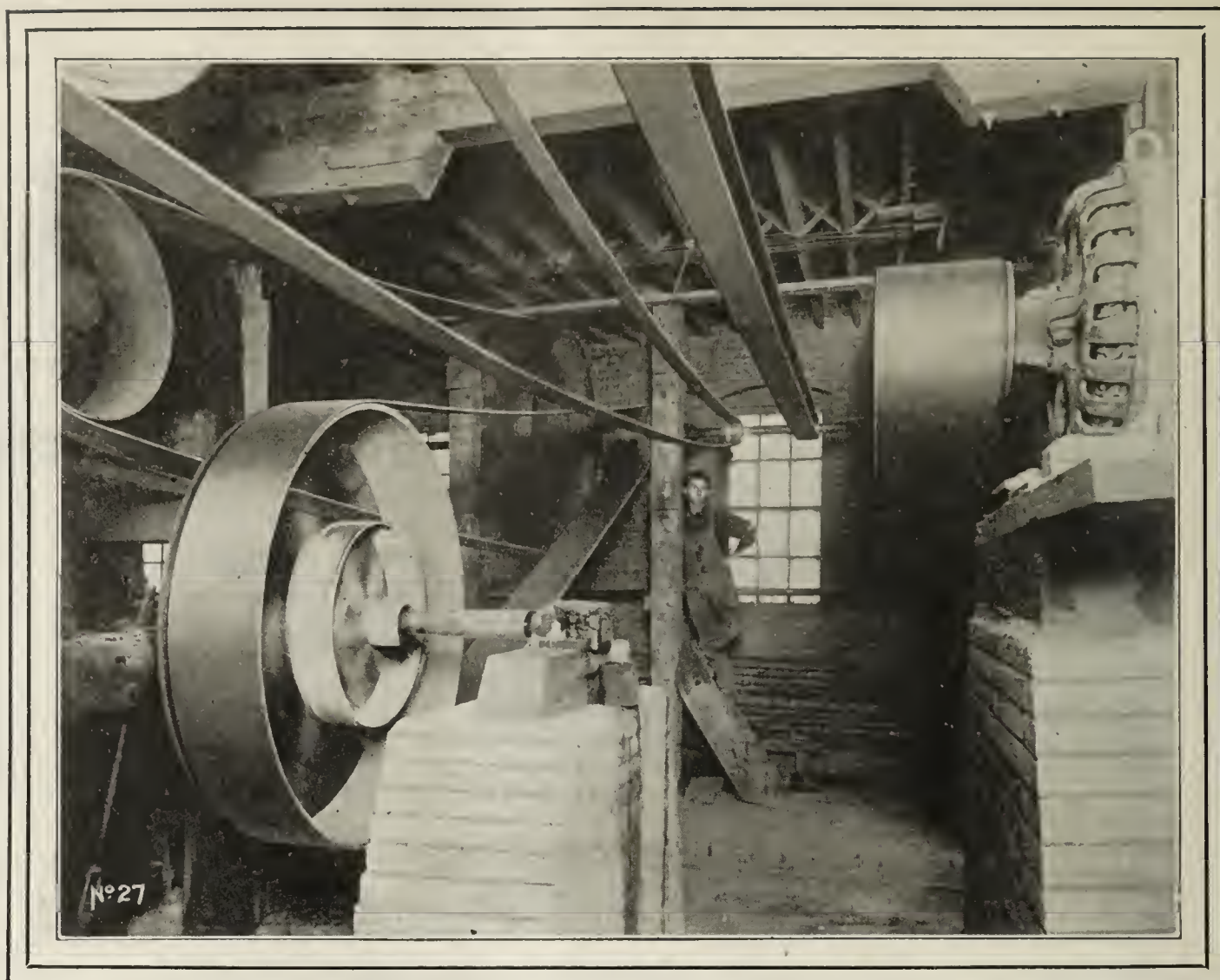
REASONS WHY YOU SHOULD JOIN THE National Clay Products Industries Association **BECAUSE**



of its Purely American Policy.
of its Constructive and Educational Policy.
of its Service Features.
of its Insurance Features.
of its Many Other Benefit Features.
of its Definite Support.
it is Cheaper to Retain than Regain Good Will.
You Owe it to Yourself and Your Employees.
You Owe it to the Clay Industry.
You Owe it to Your Competitor.
Eternal Vigilance is the Price of Industrial Liberty.
You Believe in Legal Responsibility.
You Believe in Enlightened Public Opinion.
the "American Shop" is Economically Sound.
it is the Sensible Thing to Do.

**FILL OUT THE APPLICATION BLANK WE SENT
YOU UNDER SEPARATE COVER AND RETURN
IT TODAY**

NATIONAL CLAY PRODUCTS INDUSTRIES ASS'N
Chamber of Commerce Building, Chicago, Illinois



BRANCHES

ATLANTA
BOSTON
CHICAGO
CLEVELAND
EASTON, PA.
LOS ANGELES
PITTSBURGH
SAN FRANCISCO
PORTLAND, ORE.

On The Job The Year Around

Interruptions and delays of schedules are serious matters for Clay Products Manufacturers, these days of increased production.

It has been estimated by a well-known authority on ceramics, that the supply of common brick now available in the United States would build ONLY 50 Industrial buildings. (Chicago needs 25 school buildings alone.)

THIS MEANS THAT—

Clay plants MUST produce at the utmost capacity to supply the demand for brick, hollow tile, etc., not only for 1921 but for some time to come. Equipment must be kept going and plant schedules can be maintained ONLY when belts for equipment transmission and for elevating, conveying and transmitting materials, are dependable.

SCANDINAVIA Solid Woven Cotton Belting is ABSOLUTELY DEPENDABLE and ON THE JOB THE YEAR AROUND.

It handles all brick plant requirements such as the heavy load of the pug mill and it works without slipping on a dry pan. Dust, grit and dampness will not affect or tear down SCANDINAVIA because of its unusual construction. It is surface hardened and anti-frictioned throughout. ABSOLUTELY GUARANTEED.

*SCANDINAVIA STANDARDIZED THROUGHOUT YOUR PLANT
WILL END YOUR BELTING WORRIES. Write our nearest branch
for a trial length today.*

Scandinavia Belting Company
106-108 Reade St. NEW YORK

SCANDINAVIA

COTTON BELTING SOLID WOVEN

STRAIGHT LINE METHODS

Profit

The life and vitality of all business is Profit.

Success depends upon it. It is the compelling interest in the simplest transaction—the dominant thought in the greatest commercial enterprise.

And yet, one-third of the three hundred thousand manufacturing concerns in the United States, it was estimated prior to the War, earned no profit above normal interest on their investment. And ninety per cent of that three hundred thousand did not even know what it actually cost to produce their products.

Blind business! Ignorance and guesswork in the place of *knowledge*—so easily obtained thru the application of simple and sound methods of Cost Accounting, more necessary today than ever before.

With material and labor cost changing over night, sales volume fluctuating, prices indefinite, markets uncertain—*safeguard your Profits.*

Exact knowledge of costs, based on Facts and Figures, and intelligently applied by an experienced and competent organization is *the only means of insuring Profits*—

The only basis on which *to increase Profits*—

The only *guarantee of Profits.*

ERNST & ERNST

AUDITS - SYSTEMS

TAX SERVICE

NEW YORK
PHILADELPHIA
BOSTON
PROVIDENCE
WASHINGTON

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MINNEAPOLIS
ST. PAUL
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BUFFALO
PITTSBURGH
DETROIT

CINCINNATI
INDIANAPOLIS
TOLEDO
ATLANTA
RICHMOND

NEW ORLEANS
DALLAS
FORT WORTH
HOUSTON
DENVER

STRAIGHT LINE METHODS

An Open Letter

TO COMMON BRICK MANUFACTURERS

from Charles H. Bryan, Vice-President and Manager of the Mercier-Bryan-Larkins Brick Company, Detroit, Michigan—President of The Common Brick Manufacturers' Association of America.

FELLOW MANUFACTURERS:

IS it worth anything to you to have the good points of brick published every month in the following magazines, reaching hundreds of thousands of architects, contractors, home builders, prospective builders and supply dealers?

<i>House & Garden</i>	<i>American Builder</i>
<i>House Beautiful</i>	<i>National Builder</i>
<i>Keith's Magazine</i>	<i>Building Age</i>
<i>National Real Estate Journal</i>	<i>Builders' Journal</i>
<i>Architectural Record</i>	<i>Permanent Builder</i>
<i>Architectural Forum</i>	<i>Building Supply News</i>
<i>Journal of the American Institute of Architects and 104 Sunday newspapers</i>	

Is it worth anything to you to have tests of brick work made by the U. S. Bureau of Standards and other authorities, so that we for the first time can give to the architects and engineers reliable data regarding the strength and fire resistance of brick as compared with concrete and other materials?

Is it worth anything to you to be supplied with sensible, attractive literature advertising brick, and with brick house plans and specifications?

Is it worth anything to you to have the building codes and laws of the country corrected, so that they shall give brick a square deal and not show preference for concrete and other materials, as they now do?

Is it worth anything to you to receive every week a letter which tells you what is being done by the other manufacturers of the country and keeps you posted on the latest developments in your industry?

Is it worth anything to you to receive a report the first of every month telling you the stocks on hand, the brick manufactured and shipped, the

orders on hand, and the price tendency on brick throughout the U. S.?

Is it worth anything to you to have the common brick industry organized and standardized and doing business like a real industry, instead of being a lot of dis-associated units, knowing nothing about each other, caring nothing about each other, trying to kill each other off by ignorant, short-sighted, unbusinesslike methods?

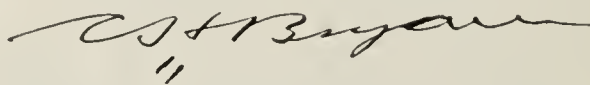
I am a brick manufacturer myself and I know what this is worth to me and I am glad to pay the bill. In fact, I want to get out of the brick business the minute these activities cease, because no industry can live and prosper without them.

There are about 1600 brick manufacturers in the United States. Four hundred of these are members of the Common Brick Manufacturers' Association of America, which is doing all of the things mentioned above to the full limit of its resources, and many things besides that I have not enumerated.

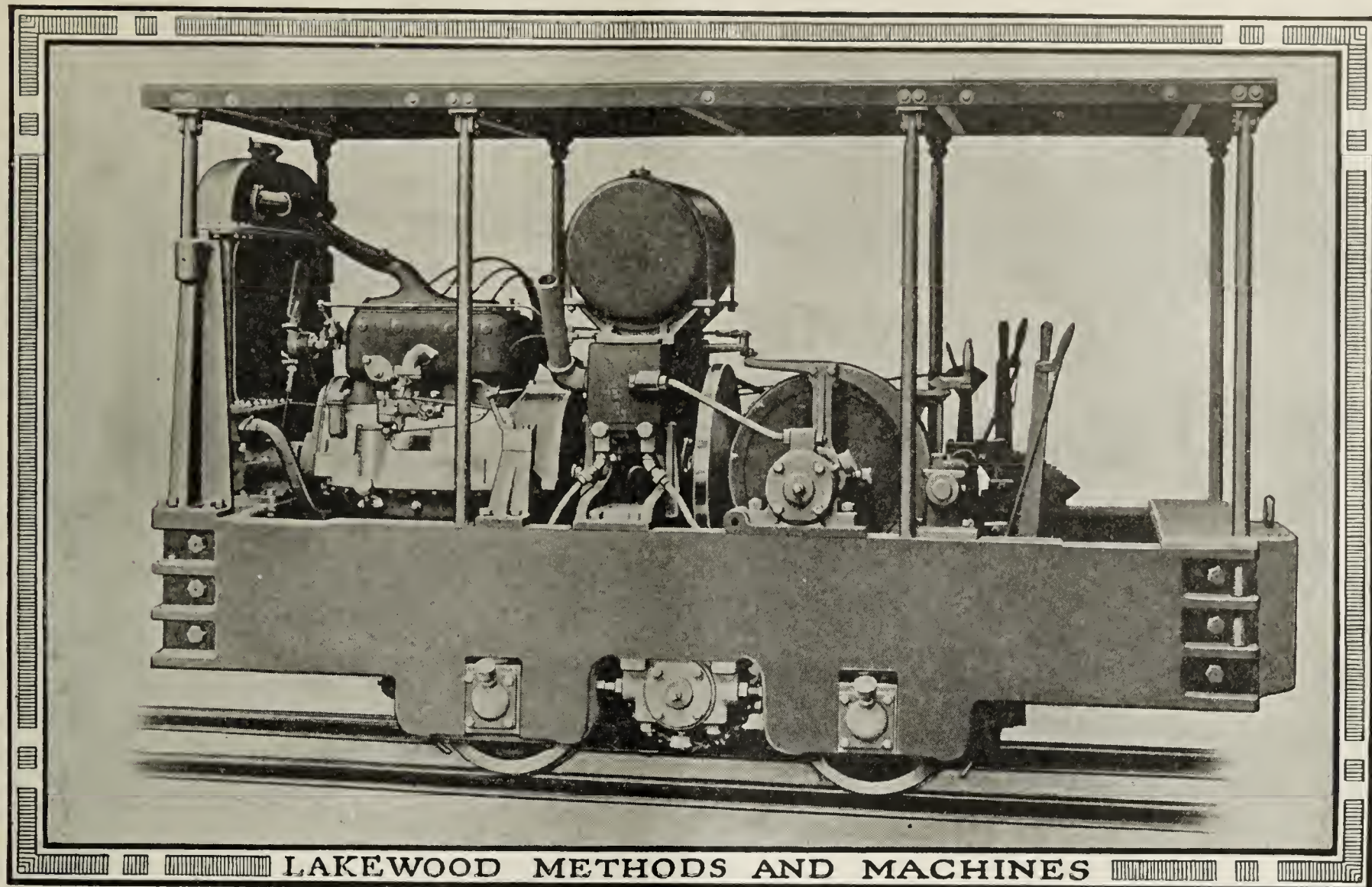
I am talking straight to the 1200 who are not in and are not helping. You know these activities help you. You will be proud of the Association and of yourself, if you come in and do your part.

I am going to ask every manufacturer who is not a member of the C. B. M. A. of A. to write me a letter at once, and do one of three things—either say you will join the Association, or tell me why you do not care to join, or ask me for any further information you desire regarding the Association.

I'll take a week off if necessary and see that these letters are answered. I'm putting a week's time against your ten minutes. The least you can do is to write me. Send your letter to the Executive Office of the Common Brick Manufacturers' Association of America, 1323 Schofield Building, Cleveland, Ohio.



President.

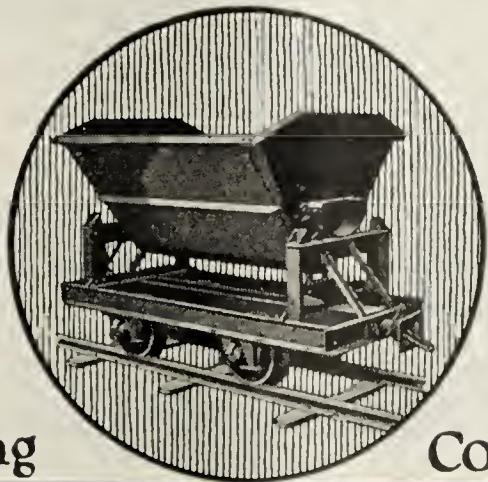


Lakewood-Burton Locomotives

Gasoline locomotives in 3½ and 6-ton sizes are included in the Lakewood line of brick and clay plant equipment. Friction drive eliminates clutch, gears and differentials. Reversible coupling and brakes on all four wheels.

A complete line of locomotives, clay cars and track is offered by this company. In studying the application of this equipment to effect maximum savings, our engineers are available.

"If it's a car, Lakewood builds it."

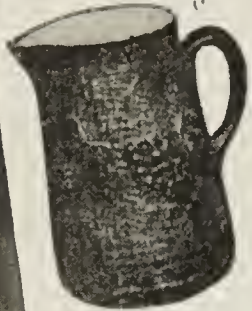


The Lakewood Engineering

Company, Cleveland U.S.A.

"Several Thousand Dollars' to the Good"

ALL AGREEMENTS ARE CONTINGENT UPON STRIKES, ACCIDENTS, DELAYS OF CARRIERS, AND OTHER DELAYS UNAVOIDABLE OR BEYOND OUR CONTROL. QUOTATIONS NET F.O.B. FACTORY AND SUBJECT TO CHANGE WITHOUT NOTICE.



Uhl Pottery Company

MANUFACTURERS OF HIGH GRADE
Stoneware ~~AND~~ Stoneware Specialties

RED FLORIST FLOWER POTS
SEWER PIPE—DRAIN TILE—FIRE BRICK—CLAY

Main Office and Warehouses
EVANSVILLE, IND.



Factory and Warehouses
HUNTINGBURG, IND.

Huntingburg, Ind., Feb. 2, 1920.

The Brown Instrument Company,
Philadelphia, Pa.

Gentlemen:

For the past ten years we have given Pyrometers the "cold shoulder".

We felt we were getting results by using Pyrometric Cones, trials and the naked eye in determining our heats. We did "get by", but we would today be several thousand dollars "to the good" had we used Pyrometers.

Although "the burn" determines one's success in the clay game, the attention given it is mediocre. The Pyrometer and Recorder revolutionizes this condition and puts the burning end rightfully in front.

It tells you where your many faults lie, at what stage they occur, points out your consistent burner, brings the heat up gradually and shows up the man who sleeps the early hours of the night and then gives her h--- until the whistle blows in the morning.

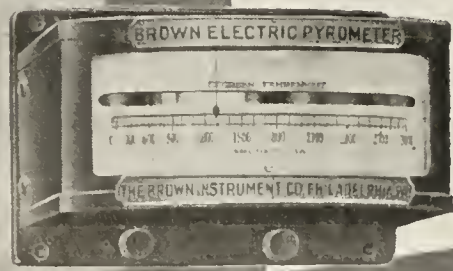
Then, another important feature is that it makes the burning interesting for the men in charge. They know exactly what they are doing and it settles definitely the various theories as to the best method of raising temperatures.

For the man who cautiously enters the clay business our advice is to do so with the help of a Pyrometer Equipment thereby preventing the leaks at the most important stage -- the burning end.

We fully admit our enthusiasm, and wonder why we turned a deaf ear in the past.

Yours truly,

UHL POTTERY COMPANY
PER *[Signature]*
General Manager.



Profit by This Man's Costly Experience

Look at the matter from every angle and you must come to this conclusion every time:
HAVING A Brown Pyrometer SAVES;
It is NOT HAVING a Brown Pyrometer which COSTS!
Put in a Brown Pyrometer Equipment without the loss of another unnecessary day. Write at once for a quotation on an equipment to meet your needs to The Brown Instrument Co., Philadelphia, or one of our District Offices in New York, Pittsburgh, Detroit, Chicago, St. Louis, Denver, San Francisco, Los Angeles or Montreal.

Read
this
twice

READ
THIS

Trade Names Now in Use

on Face Brick and Other Clay Products

The purpose of this directory is two-fold: it serves to prevent a manufacturer from adopting a trade-name that is already in use—and it also helps manufacturers who use it to establish priority of claim to a name.

ALLIANCE RUFFS—Alliance (O.) Brick Co.
 ALUMINITE—The Lock Haven Fire Brick Company, Lock Haven, Pa.
 ALUMINITE—The Stowe-Fuller Co., Cleveland, Ohio.
 ARKATEX—Southern Building Products Co., Little Rock, Ark.
 ARMOR—Greenpoint Fire Brick Co., Brooklyn, N. Y.
 ART-TEX—W. E. Loomis, Sherbrooke, P. Q.
 ARTISTICO—Capital Clay Co., Des Moines, Ia.
 ARTBRIQUE—Yingling-Martin Brick Co., Johnsonburg, Pa.
 ATHENA—Hocking Valley Fire Clay Co., Nelsonville, Ohio.
 BABYLONIAN—The Standard Brick Company, Crawfordsville, Ind.
 BEAVERCLAY—Beaver Clay Mfg. Co., New Galilee, Pa.
 BISHOP COLONIAL—Southern Brick and Tile Company, Louisville, Ky.
 BRADFORD HOLLOW BUILDING TILE—Bradford Brick & Tile Co., Bradford, Pa.
 BRADFORD REDS—Bradford Brick & Tile Co., Bradford, Pa.
 BRADFORD RUFFS—Bradford Brick & Tile Co., Bradford, Pa.
 BUCKEYE—Dover Fire Brick Co., Cleveland, Ohio.
 BURLAP—Key-James Brick Co., P. O. Alton Park, Tenn.
 BURMAH—Walkers Mills Stone and Brick Co., Pittsburgh, Pa.
 CALEDONIAN—Fiske & Co., Inc., Boston and New York.
 CLAYTEX—Walton N. Cable, New York City.
 CLAYTON MISSIONS—Washington Brick, Lime & Sewer Pipe Co., Spokane, Wash.
 CLAYTON VELVETS—Washington Brick, Lime & Sewer Pipe Co., Spokane, Wash.
 CLOISTER—Western Brick Co., Danville, Ill.
 COLONIAL—Capital Clay Co., Des Moines, Ia.
 CONCO CLAY PRODUCTS—H. D. Conkey & Co., Mendota, Ill.
 CORALSTONE—Harris Brick Co., Zanesville, O.
 CORALROSE—Harris Brick Co., Zanesville, O.
 COLUMCLAY—Columbia Clay Co., Columbia, S. C.
 CORDOVA (Roofing Tile)—Gladding, McBean & Co., San Francisco and Lincoln, Cal.
 CORSWEVE—Thomas Moulding Brick Co., Chicago, Ill.
 CROWN—Green Fire Brick Co., A. P., Mexico, Mo.
 DENISON—Mason City (Ia.) Brick & Tile Co.
 DE LUXE—The Standard Brick Company, Crawfordsville, Ind.
 DIAMOND—Missouri Fire Brick Co., St. Louis, Mo.
 DORIC—Western Brick Co., Danville, Ill.
 DOVER—Dover Fire Brick Co., Cleveland, O.
 DUNBAR—United Refractories Co., Uniontown, Pa.
 EGYPTIAN PAVING BLOCK—Murphysboro (Ill.) Paving Brick Co.
 E. F. B. CO.—Elk Fire Brick Co., St. Marys, Pa.
 ELKCO—Elk Fire Brick Co., St. Marys, Pa.
 ELKCO SPECIAL—Elk Fire Brick Co., St. Marys, Pa.
 ELK STEEL—Elk Fire Brick Co., St. Marys, Pa.
 EMBOSTEX—Streator (Ill.) Brick Co.
 EMPIRE—Green Fire Brick Co., A. P., Mexico, Mo.
 EMPIRE—The Minor Fire Brick Company, Empire, Ohio.
 EMPIRE—Western Brick Co., Danville, Ill.
 EVERHARD ANTIQUE—Everhard Co., Massillon, O.

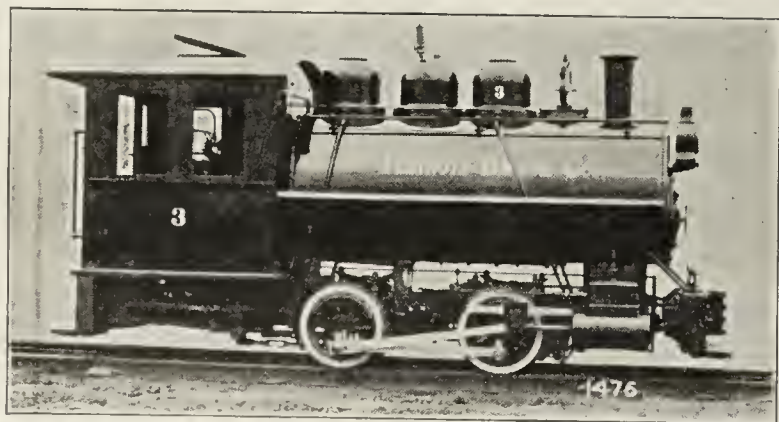
EVERHARD DOUBLE-TEXTURE—Everhard Co., Massillon, O.
 EVERHARD FERN-LEAF—Everhard Co., Massillon, Ohio.
 EVERLASTING—Mason City (Ia.) Brick & Tile Co.
 FALLSTON IRON SPOTS—Fallston Fire Clay Co., Pittsburgh, Pa.
 FALLTEX—Fallston Fire Clay Co., Pittsburgh, Pa.
 FISKLOCK—Fiske & Co., Inc., Boston and New York.
 FRASERCLAY—Fraser Brick Co., Dallas, Texas.
 F. R. C. CHROME—Federal Refractories Company, Alexandria, Pa.
 F. R. C. MAGNESITE—Federal Refractories Company, Alexandria, Pa.
 F. R. C. SILICA—Federal Refractories Company, Alexandria, Pa.
 FULTONE—Fultonham-Texture Brick Co., East Fultonham, Ohio.
 FULTONHAM-TEXTURE—Fultonham-Texture Brick Co., East Fultonham, Ohio.
 GOTHIC—Western Brick Co., Danville, Ill.
 GREENDALES—Hocking Valley Pro. Co., Columbus, O.
 GREENDALE RED RUGS—Hocking Valley Pro. Co., Columbus, O.
 GREENDALE RUGS—Hocking Valley Pro. Co., Columbus, O.
 GRID—Fiske & Co., Inc., Boston and New York.
 HAWK-I-TEX—Capital Clay Co., Des Moines, Ia.
 HI-GRADE—Southwest Building Supply Co., Springfield, Mo.
 HOCKING BLOCK—Hocking Valley Brick Co., Columbus, O.
 HOLLAND SPLIT—Thomas Moulding Brick Co., Chicago, Ill.
 HOMESPUN—Thomas Moulding Brick Co., Chicago, Ill.
 HY-TEX—Hydraulic Press Brick Co., St. Louis, Mo.
 INTERLOCKING TILE—Fraser Brick Co., Dallas, Texas.
 IRONCLAY—Iron Clay Brick Co., Columbus, O.
 KEYSTONE—Elk Fire Brick Co., St. Marys, Pa.
 LADLE—The Zoar Fire Clay Company, Zoar, Ohio.
 LAKE SHORE MINGLED SHADES—The Burton-Townsend Co., Zanesville, Ohio.
 LAKE SHORE BLOCK—The Burton-Townsend Co., Zanesville, Ohio.
 L. H. STEEL—The Lock Haven Fire Brick Company, Lock Haven, Pa.
 LO-TEX BRICK—The Longmont (Colo.) Brick & Tile Co.
 LO-TEX TILE—The Longmont (Colo.) Brick & Tile Co.
 LOXALL—Exner, J. E., Coffeyville, Kan.
 M. D. ELK—Elk Fire Brick Co., St. Marys, Pa.
 MEDAL BLOCK—Medal Paving Brick Co., Cleveland, Ohio.
 MEXICO, MO.—Green Fire Brick Co., A. P., Mexico, Mo.
 MINOR—The Minor Fire Brick Company, Empire, Ohio.
 MITCHELL EXTRA—Mitchell Clay Mfg. Co., St. Louis, Mo.
 MITCHELL SUPERIOR—Mitchell Clay Mfg. Co., St. Louis, Mo.
 MITCHELL NO. 1—Mitchell Clay Mfg. Co., St. Louis, Mo.
 MOBRIQUE—Harris Brick Co., Zanesville, O.
 MONTEZUMA RED FACE—Montezuma (Ind.) Brick Works.

MOSAIC—Western Brick Co., Danville, Ill.
 NATIONAL—The National Fire Brick Company, Strasburg, Ohio.
 NAVAJO—Kansas Buff Brick & Mfg. Co., Buffalo, Kan.
 NO. 1—J. H. Gautier & Co., Jersey City, N. J.
 NUVOGUE—Boone (Ia.) Brick, Tile & Pav. Co.
 OIL—J. H. Gautier & Co., Jersey City, N. J.
 OLD ROSE COLONIAL—Montezuma (Ind.) Brick Works.
 OLEAN BLOCK—Sterling Brick Co., Olean, N. Y.
 OXFORD—Southern Brick and Tile Company, Louisville, Ky.
 PENN.—The Lock Haven Fire Brick Company, Lock Haven, Pa.
 PERSIAN SPLIT—Thomas Moulding Brick Co., Chicago, Ill.
 POS-TEX—Poston Brick Co., Springfield, Ill.
 "POTTRY"—B. Mifflin Hood Brick Co., Atlanta, Ga.
 PROMENADE—Yingling-Martin Brick Co., Johnsonburg, Pa.
 RAINBOW—Burton Townsend Co., The Zanesville, Ohio.
 RED ROCK RUFFS—Auburn Shale Brick Co., Gettysburg, Pa.
 ROTEX—Elk Fire Brick Co., St. Marys, Pa.
 ROYAL HA-SIERS—Decatur Brick Mfg. Co., Decatur, Ill.
 RUFTEX—Thomas Moulding Brick Co., Chicago.
 RUG—Hocking Valley Pro. Co., Columbus, O.
 RUSTIQUE ORIENTAL—Martinsville (Ind.) Bk. Co.
 ST. MARYS—Elk Fire Brick Co., St. Marys, Pa.
 SHALE-TEX—Streator (Ill.) Brick Co.
 SIL-O-CEL—Celite Products Co., New York City.
 SPECIAL—Green Fire Brick Co., A. P., Mexico, Mo.
 SPEEDWAY BLOCK—Alliance (O.) Clay Prod. Co.
 STANDARD—Green Fire Brick Co., A. P., Mexico, Mo.
 STANDARD—The National Fire Brick Company, Strasburg, Ohio.
 TAPESTRY—Fiske & Co., Inc., Boston and New York.
 TAVERN BRICK—Metropolitan Pav. Brick Co., Canton, O.
 TEXTUR—Thomas Moulding Brick Co., Chicago, Ill.
 TIFFANY—Thomas Moulding Brick Co., Chicago, Ill.
 TORONTO—Toronto Fire Clay Co., Toronto, O.
 TOWNSEND BLOCK—The Burton-Townsend Co., Zanesville, Ohio.
 TURKESTAN—Beaver Clay Mfg. Co., New Galilee, Pa.
 TURKO—Rochester (Pa.) Clay Products Co.
 UNITED—United Refractories Co., Uniontown, Pa.
 U. R. CO.—United Refractories Co., Uniontown, Pa.
 U-TEX—Fultonham-Texture Brick Co., East Fultonham, Ohio.
 VERTEX—Beaver Clay Mfg. Co., New Galilee, Pa.
 VITRI-CRAFT—Schuylkill Valley Vitri-fied Products Co., Oaks, Montgomery Co., Pa.
 VOLCANIC—Beaver Clay Mfg. Co., New Galilee, Pa.
 WIRE-CUT-LUG BRICK—Dunn Wire-Cut Lug Brick Co., Conneaut, Ohio.
 ZOAR—The Zoar Fire Clay Company, Zoar, Ohio.

Brick and Clay Record Buyers' Directory of Manufacturers of Machinery, Equipment and Supplies

See Table of Contents Page for Advertisers Directory

Aerial Tramways. Leschen & Sons Rope Co., A.	Belting. Gandy Belting Co. Quaker City Rubber Co. Main Belting Co. Scandinavia Belting Co. Weller Manufacturing Co.	Boilers. (See Engines and Boilers) Frost Manufacturing Co.	Cable Conveyors. Caldwell & Son Co., H. W. Lancaster Iron Works, Inc. Leschen & Sons Rope Co., A.	Cements (Insulating). Cellite Products Co.	Coal Pulverizers. Bonnot Co. Gruendler Patent Crusher & Pulv. Co.
Air Receivers Frost Manufacturing Co.	Belting, Silent Chain. Link-Belt Company.	Boiler Insulation. Armstrong Cork & Insulation Co. Cellite Products Co.	Carbonate of Barytes. Roessler Hasslacher Chem. Co.	Chain Caldwell & Son Co., H. W. Link-Belt Company. Weller Manufacturing Co.	Conveying Machinery. (Also see Elevators and Conveyors) Columbus Conveyor Co. Crossley Machine Co. Potts & Co., C. & G. Weller Manufacturing Co.
Anti-Friction Metals. Toronto Fdry. & Mach. Co.	Belt Conveyors. Caldwell & Son Co., H. W. Gandy Belting Co. Hadfield-Penfield Steel Co. Lancaster Iron Works, Inc. Link-Belt Company. Manufacturers Equipment Co. Quaker City Rubber Co. Potts & Co., C. & G. Scandinavia Belting Co. Weller Mfg. Co.	Bookkeeping Systems Ernst & Ernst	Cars. Chase Fdry. & Mfg. Co. Fate-Root-Heath Co. Hadfield-Penfield Steel Co. Hendrick Manufacturing Co. International Clay Mch. Co. Koppel Industrial Car and Equipment Co. Lakewood Engineering Co. Lancaster Iron Works. Manufacturers Equipment Co. Robinson, Frank H. Steele & Sons, J. C. Toronto Fdry. & Machine Co. Watt Mining Car Wheel Co. Weller Mfg. Co.	Clamshells. Lakewood Engineering Co. Osgood Company, The	Conveyors (Portable). Barber-Greene Co. Lancaster Iron Works, Inc. Portable Machinery Co.
Auditing Ernst & Ernst.	Belt Fasteners Crescent Belt Fastener Co.	Brick Handling Machinery. Hadfield-Penfield Steel Co. Lakewood Engineering Co. Mathews Gravity Carrier Co. Portable Machy. Co.	Castings. Bonnot Co. Caldwell & Son Co., H. W. Chambers Bros. Co. Dodge Sales & Engineering Co. Hadfield-Penfield Steel Co. International Clay Mch. Co. Lancaster Iron Works. Link-Belt Company. Manufacturers Equipment Co. Marion Steam Shovel Co. Potts & Co., C. & G. Steele & Sons, J. C. Stevenson Co. Toronto Fdry. & Mach. Co.	Clay Feeders and Mixers. Bonnot Company. Fate Co., The J. D. Chambers Bros. Co. Freese & Co., E. M. Hadfield-Penfield Steel Co. International Clay Mch. Co. Lancaster Iron Works. Manufacturers Equipment Co. Marion Mach., Fdry Sup. Co. Potts & Co., C. & G. Robinson, Frank H. Steele & Sons, J. C. Stevenson Co. Weller Manufacturing Co.	Cost Accounting Ernst & Ernst
Automatic Stove Rooms Proctor & Schwartz	Belt Hooks and Rivets Crescent Belt Fastener Co.	Brick (Insulating). Cellite Products Co.	Car Movers. Caldwell & Son Co., H. W. Marion M., Fdry. & S. Co. Weller Manufacturing Co.	Clay Gatherers. Eagle Iron Works. Sauerman Bros. Schofield-Burkett Cons. Co.	Couplings (Shaft and Friction). Hill Clutch Co., The
Babbitt Metal Toronto Fdry. & Mach. Co.	Belt Lacing Crescent Belt Fastener Co.	Brick Machines. (See "Dry Press," "Stiff-Mud" and "Soft-Mud.")	Clutches. Caldwell & Son Co., H. W. Caldwell Co., W. E. Hadfield-Penfield Steel Co. Hill Clutch Co. International Clay Mch. Co. Lancaster Iron Works, Inc. Link-Belt Company. Weller Manufacturing Co.	Coal. Big Creek Coals, Inc. Bledsoe Co., Walter F. Farley-Hopkins Co. O'Gara Coal Co. Peabody Coal Co. Union Fuel Co.	Crane, Locomotive. Ball Engine Co. Bucyrus Company Link-Belt Company Marion Steam Shovel Co., The Osgood Co.
Barium Carbonate Roessler Hasslacher Chem. Co.	Belt Tighteners. Hill Clutch Co., The Weller Manufacturing Co.	Buckets, Dredging and Excavating. Ball Engine Co. Bucyrus Company Lakewood Engineering Co. Marion Steam Shovel Co., The	Coal Handling Machinery. Columbus Conveyor Co. Hendrick Manufacturing Co. Link-Belt Company. Weller Manufacturing Co.	Crushers and Pulverizers. American Pulverizer Co. Bonnot Co. Brewer & Co. Chambers Bros. Co. Fate-Root-Heath Co. Gruendler Patent Crusher & Pulv. Co. Freese & Co., E. M. Frost Manufacturing Co. Hadfield-Penfield Steel Co. International Clay Mch. Co. Lancaster Iron Works, Inc. Manufacturers Equipment Co. Robinson, Frank H. Stevenson Co. Toronto Fdry. & Mach. Co.	Cutters, Automatic Rotary. Bonnot Co. Chambers Bros. Co. Claycraft Service Co. Fate-Root-Heath Co.
Barytes, Carbonate of, Roessler Hasslacher Chem. Co.	Boiler Cleaners—Metal Treatment.	Buckets, Elevator. Hendrick Manufacturing Co. Link-Belt Company Mullins Body Corp. Robinson, Frank H. Weller Manufacturing Co.	Coal Handling Machinery. Columbus Conveyor Co. Hendrick Manufacturing Co. Link-Belt Company. Weller Manufacturing Co.	Cranes, Locomotive. Ball Engine Co. Bucyrus Company Link-Belt Company Marion Steam Shovel Co., The Osgood Co.	
Barrows and Trucks. Bonnot Co. Chambers Bros. Co. Fate-Root-Heath Co. Freese & Co., E. M. Hadfield-Penfield Steel Co. Lakewood Engineering Co. Lancaster Iron Works, Inc. Manufacturers Equipment Co. Potts & Co., C. & G. Robinson, Frank H. Steele & Sons, J. C. Toronto Fdry. & Mach. Co. Weller Mfg. Co.	Boiler Setting Cement. Jointless Fire Brick Co.	Burning System Boss Engineering Co.			
Bearings. Caldwell & Son Co., H. W. Dodge Sales & Engineering Co. Hill Clutch Co., The		Cables. Leschen & Sons Rope Co., A. Robinson, Frank H.			



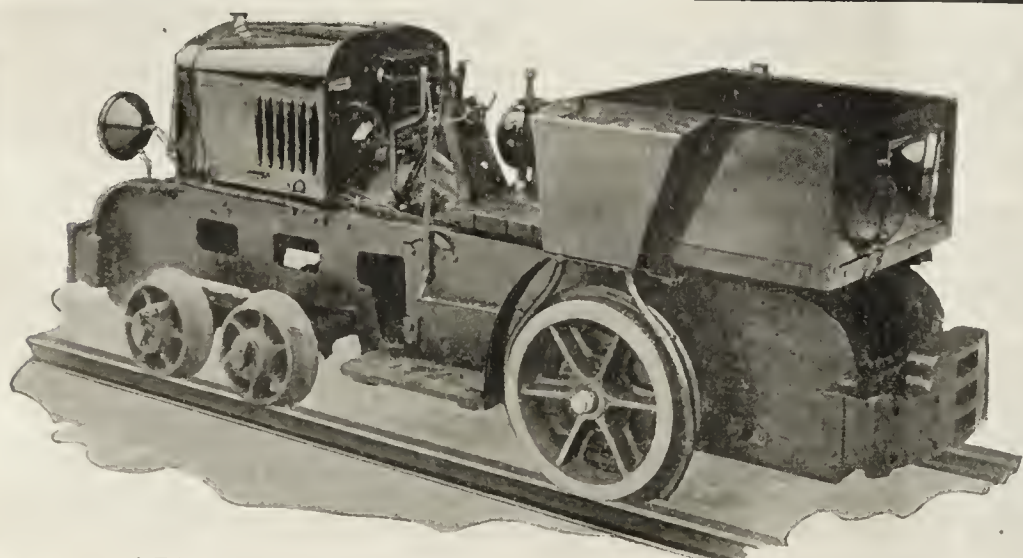
ALL TYPES—ANY SIZE—GAUGE

Davenport Locomotives for Clay Haulage

BUILT FOR SERVICE

Submit your haulage problems to us, we will make proper recommendations

Davenport Locomotive Works
Davenport, Iowa



APPLIED TO GASOLINE MOTOR HAULAGE

Ford Efficiency

All the advantages of Ford Service, upkeep and efficiency combined in this heavy cast iron motor.

We use new Ford Ton Truck power plant thruout motor, transmission, and overhead worm drive.

In addition;—our special auxiliary reverse transmission giving you the same speeds and pulling power in reverse as forward.

Front pony truck construction makes bad curves easy.

Where loads and grades are not excessive the machine absolutely is in a class by itself, doing all the work of a \$5000 motor at a fraction of the cost.

No matter what your Haulage Proposition—Get the facts from Brookville first.

BROOKVILLE TRUCK & TRACTOR CO.
Brookville, Pa., U. S. A.

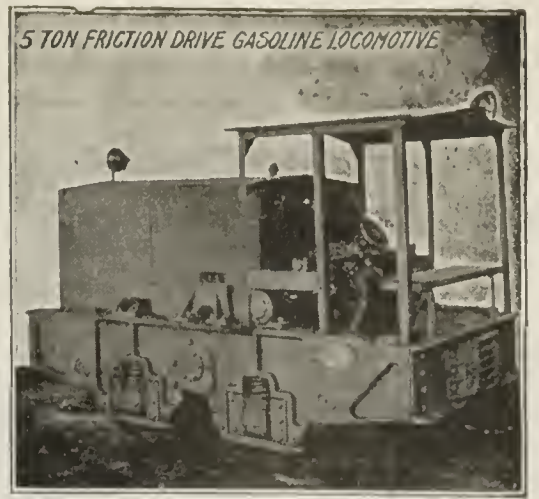


6 TON 3 SPEED GASOLINE LOCOMOTIVE

Gear and Friction Driven Gasoline Locomotives—2 to 25 Tons on Drive Wheel

WHITCOMB LOCOMOTIVES

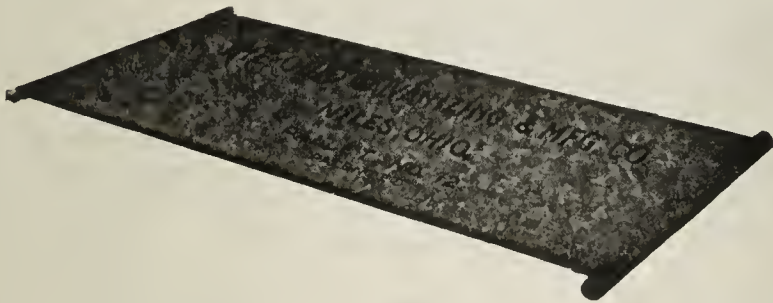
IT WILL PAY YOU TO GET OUR
PROPOSITION BEFORE YOU BUY
GEO. D. WHITCOMB CO.
MAIN OFFICE AND WORKS
ROCHELLE, ILLINOIS
U. S. A.



5 TON FRICTION DRIVE GASOLINE LOCOMOTIVE

Storage Battery Locomotives—1 to 8 Tons on Drive Wheels

Style No. 12

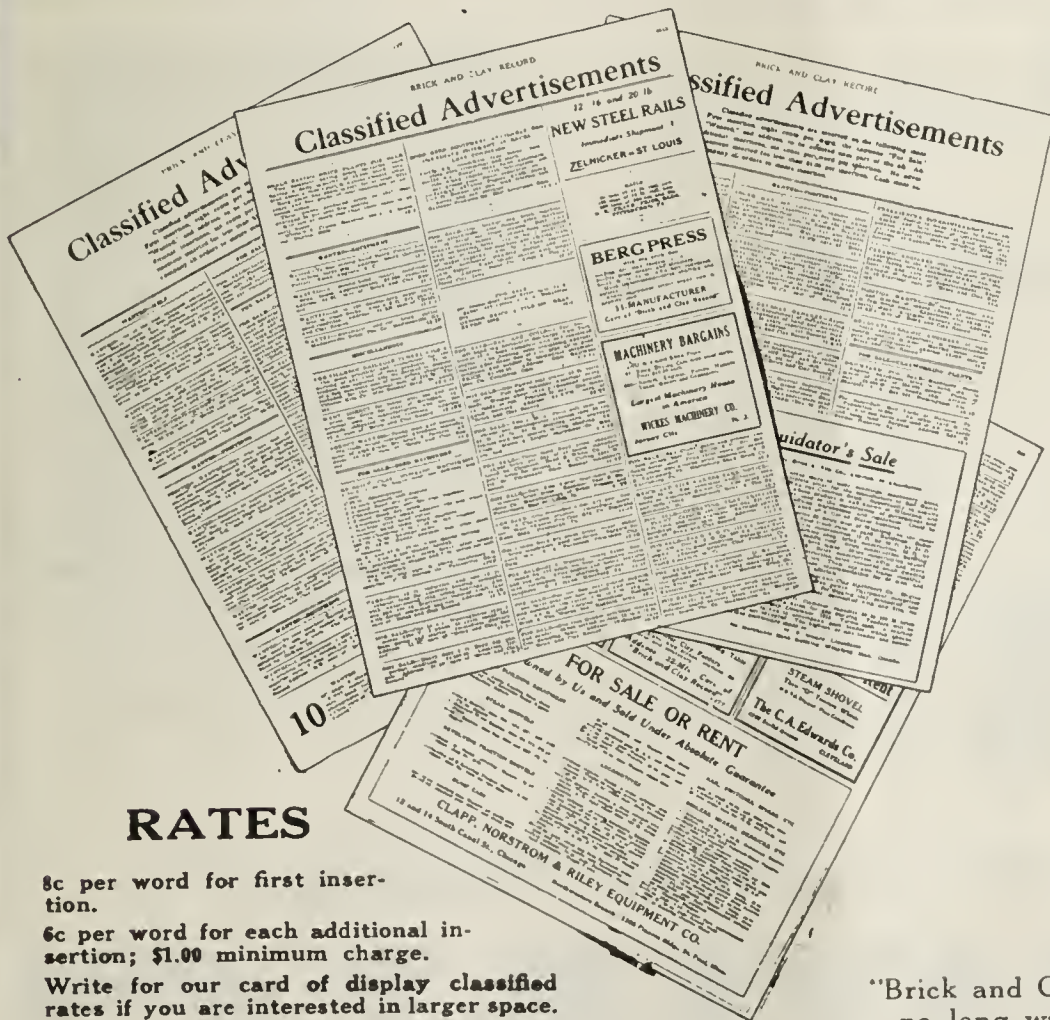


We make a Steel Pallet that is just exactly what your class of work requires

Our line of manufacture covers the entire Steel Pallet field.
No matter what pattern you need. If you require something quite out of the ordinary, so much the better. We can make it right, deliver it promptly and for the least price. Because we are specialists in this particular line.
Simply let us know what you need or send for complete descriptive matter.

A Time and Money Saver

The Ohio Galvanizing & Mfg. Co.
Niles, Ohio



RATES

8c per word for first insertion.
6c per word for each additional insertion; \$1.00 minimum charge.
Write for our card of display classified rates if you are interested in larger space.

Results! Results!

Classified ads in "Brick and Clay Record" produce results. Concerns like Fraser Brick Co., The Chanute Brick and Tile Co., Sphar Brick Co., and scores of others have written to tell us so. Below we quote from a few of the many complimentary letters received:

"Kindly discontinue this ad, as we sold all the car racks the first of the month, thanks to your good publication."

"Results obtained are so satisfactory that it will not be necessary to reinsert the advertisement."

"I thank your company for the good service rendered to me; as an advertising medium, I will say that your paper gets the results. Not less than 75 letters I received on three small ads."

"We wish to compliment you on the good results obtained thru advertisement carried in the 'Brick and Clay Record'. We carried our advertisement in several different publications, and ad carried through your columns is the only one that brought us results."

"Had excellent results from the ad, and have purchased everything I need at the present."

"Brick and Clay Record" is published every other Tuesday—no long waits between issues. Send in your order now.

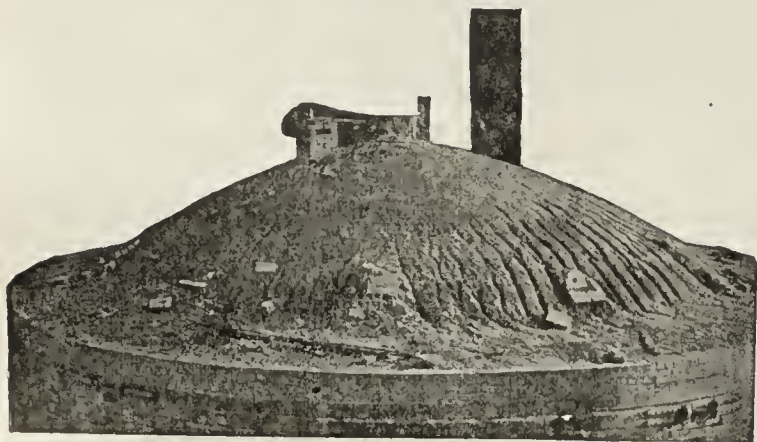
BRICK AND CLAY RECORD, 610 Federal St., Chicago, Ill.

Buyers' Directory of Manufacturers—Continued

<p>Freese & Co., E. M. Hadfield-Penfield Steel Co. International Clay Mch. Co. Lancaster Iron Works, Inc. Manufacturers Equipment Co. Marion M. Fdry. & S. Co. Robinson, Frank H. Steele & Sons, J. C.</p> <p>Cutting Wires. Manufacturers Equipment Co. Robinson, Frank H.</p> <p>Dies. Bonnot Co. Chambers Bros. Co. Crossley Machine Co. Fate-Root-Heath Co. Freese & Co., E. M. Hadfield-Penfield Steel Co. International Clay Mch. Co. Lancaster Iron Works, Inc. Manufacturers Equipment Co. Robinson, Frank H. Steele & Sons, J. C. Stevenson Co. Toronto Fdry. & Mach. Co. Weller Mfg. Co.</p> <p>Digger. Bay City Dredge Works. Buckeye Traction Ditcher Co. Bucyrus Company Marion Steam Shovel Co.</p> <p>Digging Machinery. Ball Engine Co. Bay City Dredge Works. Bucyrus Company Hadfield-Penfield Steel Co. Lakewood Engineering Co. Link-Belt Company. Marion Steam Shovel Co. Osgood Company. Sauerman Bros. Schofield-Burkett Cons. Co. Thew Shovel Co.</p> <p>Disintegrators. Bonnot Co. Brewer & Co. Chambers Bros. Co. Crossley Machine Co. Fate-Root-Heath Co. Freese & Co., E. M. Hadfield-Penfield Steel Co. International Clay Mch. Co.</p>	<p>Lancaster Iron Works, Inc. Manufacturers Equipment Co. Marion M. Fdry. & Sup. Co. Potts & Co., C. & G. Robinson, Frank H. Steele & Sons, J. C.</p> <p>Ditching Machines. Ball Engine Co. Bay City Dredge Works. Buckeye Traction Ditcher Co. Bucyrus Company Marion Steam Shovel Co., The Osgood Company, The</p> <p>Dredges. Bay City Dredge Works. Bucyrus Company Marion Steam Shovel Co., The Osgood Company, The</p> <p>Drives (Silent Chain). Link-Belt Company</p> <p>Dryers. Bonnot Co. Boss Engineering Co. Claycraft Service Co. Crossley Machine Co. Fate-Root-Heath Co. Hadfield-Penfield Steel Co. International Clay Mch. Co. Lancaster Iron Works, Inc. Manufacturers Equipment Co. Philadelphia Drying Machinery Co. Proctor & Schwartz, Inc. Robinson, Frank H. Steele & Sons, J. C.</p> <p>Dryers (Sand) Bonnot Company. Fate-Root-Heath Co. Hadfield-Penfield Steel Co. Lancaster Iron Works, Inc. Stevenson Co.</p> <p>Dry Pans. Bonnot Co. Chambers Bros. Co.</p>	<p>Eagle Iron Works. Fate-Root-Heath Co. Freese & Co., E. M. Frost Manufacturing Co. Hadfield-Penfield Steel Co. International Clay Mch. Co. Lancaster Iron Works, Inc. Manufacturers Equipment Co. Robinson, Frank H. Stevenson Co. Toronto Fdry. & Mach. Co.</p> <p>Dry Press Brick Machines Hadfield-Penfield Steel Co. Potts & Co., C. & G. Robinson, Frank H.</p> <p>Dynamos and Generators Burke Electric Co.</p> <p>Electrical Industrial Trucks. Koppel Industrial Car and Equipment Co. Lakewood Engineering Co.</p> <p>Elevators and Conveyors. Bonnot Co. Caldwell & Son Co., H. W. Chambers Bros. Co. Columbus Conveyor Co. Fate-Root-Heath Co. Freese & Co., E. M. Hadfield-Penfield Steel Co. International Clay Mch. Co. Gandy Belting Co. Godfrey Conveyor Co. Lancaster Iron Works, Inc. Link-Belt Company. Main Belting Co. Manufacturers Equipment Co. Mathews Gravity Carrier Co. Quaker City Rubber Co. Robinson, Frank H. Scandinavia Belting Co. Stevenson Co. Toronto Fdry. & Mach. Co. Weller Mfg. Co.</p> <p>Engineers. Schaffer Engineering & Equipment Co., The</p>	<p>Engines and Boilers. Ball Engine Co. Bonnot Co. Crossley Machine Co. Freese & Co., E. M. Frost Manufacturing Co. Hadfield-Penfield Steel Co. Manufacturers Equipment Co. Robinson, Frank H.</p> <p>Excavating Machinery. Ball Engine Co. Bay City Dredge Works. Bucyrus Company Portable Machinery Co. Lakewood Engineering Co. Link-Belt Company. Marion Steam Shovel Co., The Osgood Company, The Schofield-Burkett Cons. Co. Thew Shovel Co.</p> <p>Excavators, Ditch and Trench. Bay City Dredge Works. Buckeye Traction Ditcher Co. Bucyrus Company Marion Steam Shovel Co.</p> <p>Excavators, Dragline. Bucyrus Company Marion Steam Shovel Co. Schofield-Burkett Cons. Co.</p> <p>Fans. Bonnot Co. Freese & Co., E. M. Garden City Fan Co. Hadfield-Penfield Steel Co. Robinson, Frank H.</p> <p>Feed Water Heaters. Canton Grate Co. Freese & Co., E. M. Frost Manufacturing Co.</p> <p>Fire Brick Evans Builders Co. Stowe-Fuller Co.</p>	<p>Filter Presses. Bonnot Co. Crossley Machine Co. Hadfield-Penfield Steel Co.</p> <p>Flower Pot Machinery. Baird Machine & Mfg. Co.</p> <p>Flue Cleaners. Marion Mach., Fy. & Sup. Co.</p> <p>Friction Clutches. Crossley Machine Co. Dodge Sales & Eng. Co. Hill Clutch Co., The Weller Manufacturing Co.</p> <p>Frogs and Switches. Lakewood Engineering Co. Robinson, Frank H. Toronto Fdry. & Mach. Co.</p> <p>Furnace Insulation. Armstrong Cork & Insulation Co. Celite Products Co.</p> <p>Gas Producers. International Clay Mch. Co. Manufacturers Equipment Co.</p> <p>Gauges (Vacuum, Pressure and U) Taylor Instrument Companies</p> <p>Gears. Caldwell Co., W. E. Caldwell & Son Co., H. W. Crossley Machine Co. Gardner Machine & Mfg. Co. Dodge Sales & Eng. Co. Hill Clutch Co., The Link-Belt Company. Weller Manufacturing Co.</p>	<p>Gloves Des Moines Glove Mfg. Co.</p> <p>Granulators. Bonnot Co. Brewer & Co. Chambers Bros. Co. Fate-Root-Heath Co. Freese & Co., E. M. Hadfield-Penfield Steel Co. International Clay Mch. Co. Lancaster Iron Works, Inc. Steele & Sons, J. C. Toronto Fdry. & Mach. Co.</p> <p>Grates and Grate Bars. Canton Grate Co. Crossley Machine Co. Hadfield-Penfield Steel Co. Frost Manufacturing Co. International Clay Mch. Co. Lancaster Iron Works, Inc. Manufacturers Equipment Co. Marion Mach., Fdry. & S. Co. Robinson, Frank H. Toronto Fdry. & Mach. Co.</p> <p>Gravity Carriers. Mathews Gravity Carrier Co.</p> <p>Heat Insulation. Armstrong Cork & Insulation Co. Celite Products Co.</p> <p>Holsts. Bonnot Co. Brewer & Co., H. Chambers Bros. Co. Fate-Root-Heath Co. Hadfield-Penfield Steel Co. International Clay Mch. Co. Lancaster Iron Works, Inc. Link-Belt Company. Manufacturers Equipment Co. Weller Mfg. Co.</p>
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On Guard!—

in the crown of your kilns



On guard against improper kiln-temperature conditions and instantly flashing a warning signal to the operator when attention to his fire is necessary. Thwing Pyrometers in your kilns will eliminate guess-work in your heat control. They enable a beginner to do good work and help the experienced man to do better work. Easy to read, simple and sturdy in construction and permanently accurate, they are always on the job to reduce spoilage, save fuel and improve quality of product. Write for full information.

104

Thwing Instrument Co., 3347 Lancaster Ave., Philadelphia, Pa.

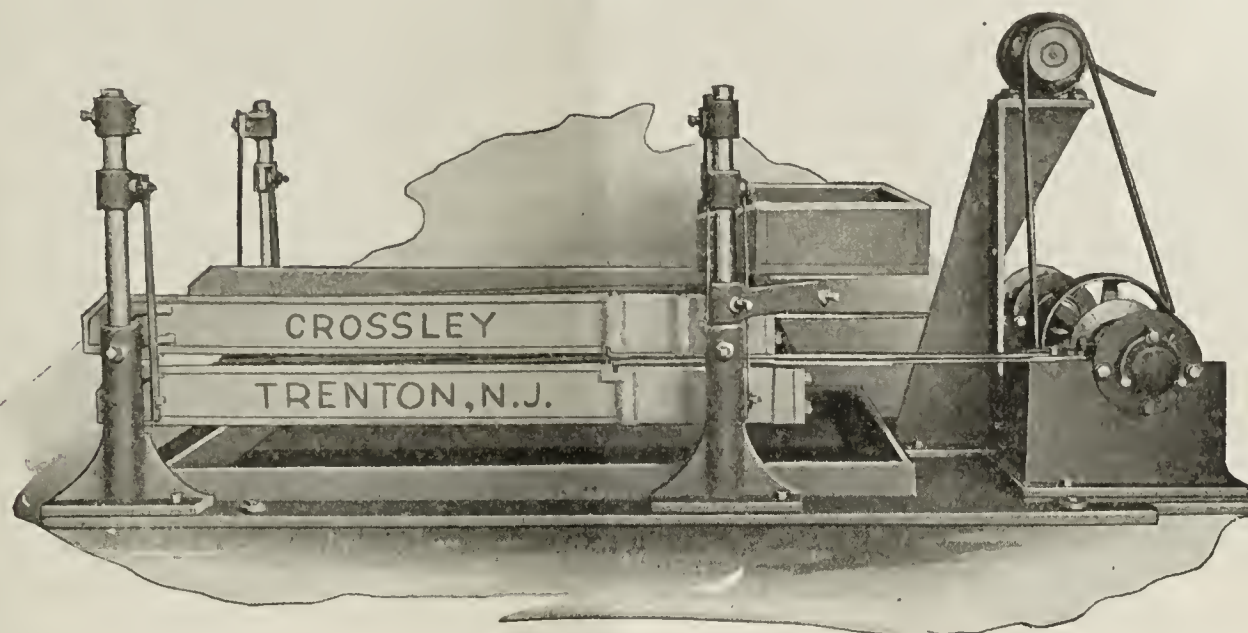
THWING

PYROMETERS

The "CROSSLEY" Ball Bearing Lawn

No bronze boxes, straps or keys to cause you any trouble.
Something new worth your consideration; it will save you
money and annoyance.

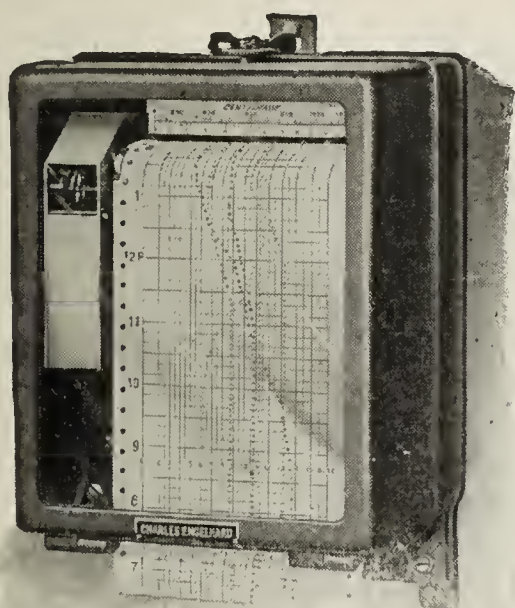
Clay
Working
Machinery
Specialists.



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Catalog.

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Engelhard Multiple Recorder

Engelhard Recorders

In the early stages of the pyrometer business most of the instruments sold were indicators.

The increasing use of science in industry created the demand for recording instruments so that for several years we have been selling more recorders than indicators. And we make a good recorder. It will help your men in firing by enabling them to repeat successful work.

It will show you what goes on at the plant while you are away. Skilled burners like it because it shows the management that they are on the job.

This recorder has the characteristics of all Engelhard equipment.

**DEPENDABILITY
ACCURACY
SIMPLICITY**

When you think of pyrometers it will pay you to remember that ENGELHARD PYROMETERS ARE GOOD PYROMETERS TO STANDARDIZE ON.

Charles Engelhard, Inc., 30 Church St., New York City

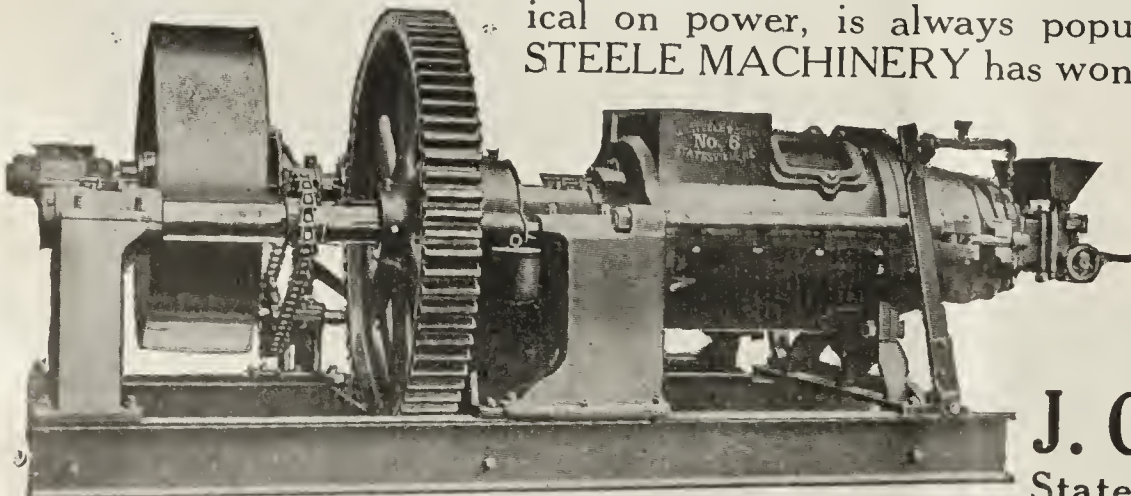
Buyers' Directory of Manufacturers—Continued

Hollow Brick Machinery. Bonnot Co. Chambers Bros. Co. Fate-Root-Heath Co. Freese & Co., E. M. Hadfield-Penfield Steel Co. International Clay Mch. Co. Manufacturers Equipment Co. Robinson, Frank H. Steele & Sons, J. C. Stevenson Co.	Manufacturers Equipment Co. Robinson, Frank H. Kiln Expert. Haigh, L. Kiln Insulation. Armstrong Cork & Insulation Co. Celite Products Co. Jointless Fire Brick Co.	Mercury Column Vacuum Gages. Taylor Instrument Companies Metals (Perforated). Hendrick Manufacturing Co. Robinson, Frank H. Molds. Baird Machine & Mfg. Co. Bonnot Co. Crossley Machine Co. Hadfield-Penfield Steel Co. Lancaster Iron Works. Manufacturers Equipment Co.	Paints (Mineral) Hy-Grade Manganese Co. Rickatson Mineral Paint Works. Pans, Dry Pans, Wet Pans, Clay or Chaser Mills Combination Tempering Pans. Bonnot Co. Chambers Bros. Co. Crossley Machine Co. Fate-Root-Heath Co. Freese & Co., E. M. Frost Manufacturing Co. Hadfield-Penfield Steel Co. Lancaster Iron Works, Inc. Manufacturers Equipment Co. Robinson, Frank H. Toronto Fdry. & Mach. Co. Stevenson Company.	Power Plant Equipment (Complete). Ball Engine Co. Bonnot Co. Burke Electric Co. Dodge Sales & Engineering Co. Frost Manufacturing Co. Hadfield-Penfield Steel Co. Link-Belt Company. Weller Mfg. Co. Power Transmission. Caldwell Co., W. E. Caldwell & Son Co., H. W. Dodge Sales & Eng. Co. Hill Clutch Co. Link-Belt Company. Weller Manufacturing Co.	Stevenson Co. Toronto Fdry. & Mach. Co. Pump, Dredging and Sand Bucyrus Company Marion Steam Shovel Co., The Pulsometer Steam Pump Co. Pumps (Steam). Pulsometer Steam Pump Co. Pyrometers. Bristol Co. Brown Instrument Co. Engelhard, Chas. Taylor Instrument Companies Thwing Instrument Co. Wilson Maculen Co.
Hydrometers or Moisture Indicators. Taylor Instrument Companies. Lancaster Iron Works. Manufacturers Equipment Co.	Lift Trucks Barrett-Cravens Co. Lakewood Engineering Co. Loaders (Wagon and Truck). Barber-Greene Co. Link-Belt Company. Sunbury Mfg. Co.	Mold Sanders. International Clay Mch. Co. Hadfield-Penfield Steel Co. Lancaster Iron Works, Inc. Manufacturers Equipment Co. Potts & Co., C. & G.	Pallets and Trays. Lancaster Iron Works, Inc. Ohio Galvanizing & Mfg. Co. Robinson, Frank H.	Pug Mills. Baird Machine & Mfg. Co. Bonnot Co. Chambers Bros. Co. Claycraft Service Co. Fate-Root-Heath Co. Freese & Co., E. M. Hadfield-Penfield Steel Co. International Clay Mch. Co. Lancaster Iron Works, Inc. Manufacturers Equipment Co. Potts & Co., C. & G. Robinson, Frank H. Steele & Sons, J. C. Stevenson Co. Toronto Fdry. & Mach. Co.	Railroad Ditchers. Ball Engine Co. Bucyrus Company Marion Steam Shovel Co., The Osgood Co. Rails (Frogs and Accessories). Lakewood Engineering Co. Robinson, Frank H.
Hygrometers Taylor Instrument Companies	Locomotives. Brookville Truck & Tractor Co. Davenport Locomotive Works. Fate-Root-Heath Co. Goodman Mfg. Co. Hadfield-Penfield Steel Co. Lakewood Engineering Co. Whitcomb Co., Geo.	Mortar Colors Rickatson Mineral Paint Works.	Perforated Sheet Metal. Hendrick Mfg. Co. Harrington & King Perforating Co. Robinson, Frank H.	Pulley, Cast Iron. Caldwell & Son Co., H. W. Dodge Sales & Eng. Co. Hill Clutch Co., The Weller Manufacturing Co.	Rattler. Bonnot Co. Freese & Co., E. M. Hadfield-Penfield Steel Co. International Clay Mch. Co. Manufacturers Equipment Co.
Insulating Materials (Heat). Armstrong Cork & Insulation Co. Celite Products Co.	Locomotive Cranes. Ball Engine Co. Bucyrus Company Link-Belt Company Marion Steam Shovel Co. Osgood Company, The	Motors—Electric. Westinghouse Electric & Mfg. Co.	Poldometer. Schaffer Eng. & Equip. Co.	Pulleys, Cast Iron. Caldwell & Son Co., H. W. Dodge Sales & Eng. Co. Hill Clutch Co., The Weller Manufacturing Co.	Recording Pressure Gages. Brown Instrument Co. Taylor Instrument Companies
Kilns. American Dressler Tunnel Kilns, Inc. Boss Engineering Co., J. C. Chambers Bros. Co. Fate-Root-Heath Co. Hadfield-Penfield Steel Co. International Clay Machy. Co. Manufacturers Equipment Co. Russell Engineering Co. Schaffer Eng. & Equip. Co.	Manganese. Hy-Grade Manganese Co. Roessler & Hasselacher Chemical Co.	Oil Storage & Pumping Systems. Hoplin & Co., C. A.	Portable Track. Manufacturers Equipment Co. Robinson, Frank H.	Pulsometer. Pulsometer Steam Pump Co.	Represses. Bonnot Co. Chambers Bros. Co. Freese & Co., E. M. Hadfield-Penfield Steel Co. Lancaster Iron Works. Robinson, Frank H. Steele & Sons, J. C.
Kiln Accessories. Caldwell Co., Inc., W. E. Fate-Root-Heath Co. Hadfield-Penfield Steel Co. International Clay Mch. Co. Lancaster Iron Works, Inc.	Mangles Philadelphia Drying Machy. Co. Proctor & Schwartz	Oil Burners. Hopkins & Co., C. A. Lancaster Iron Works. Schurs Oil Burner Co. Weller Mfg. Co.	Potters' Machinery. Bonnot Co. Baird Machine & Mfg. Co. Fate-Root-Heath Co.	Pulverizers. American Pulverizer Co. Crossley Machine Co. Gründler Patent Crusher & Pulv. Co. Robinson, Frank H.	Revolving Screens. Hendrick Manufacturing Co. Robinson, Frank H. Weller Manufacturing Co.

Steele

What the Name Exemplifies

Equipment which under the weight of its duties in the modern clay plant, gives long and uninterrupted service, costs little for repairs and is economical on power, is always popular with clay plant managers. STEELE MACHINERY has won favor wherever used.

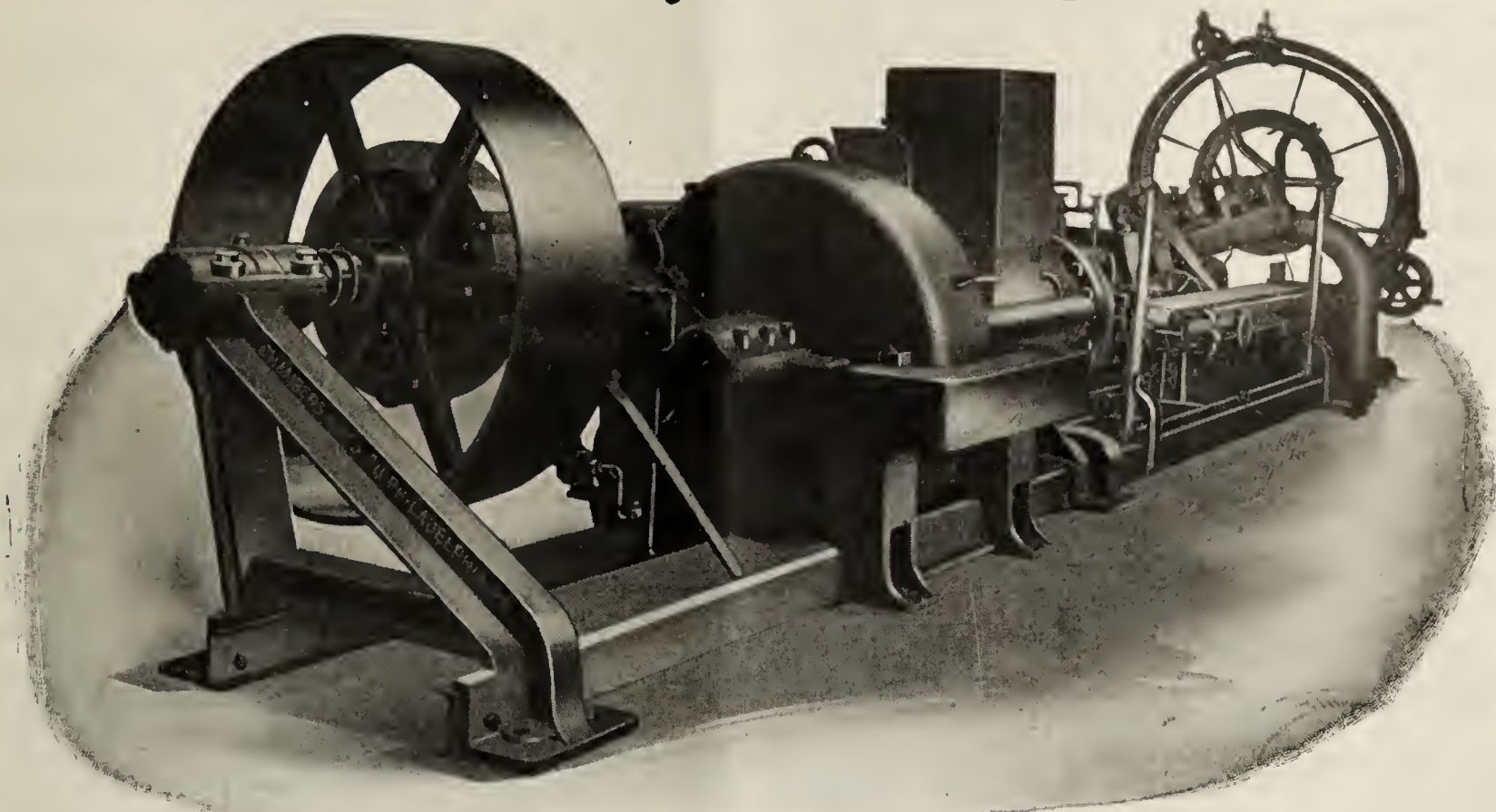


Five sizes, capacities ranging from 5,000 to 150,000 brick per day. We can furnish different style augers for obstinate clays and our engineers are always glad to help you select the augers best suited to the conditions of your clay.

Your request brings full information without obligation. Write today.

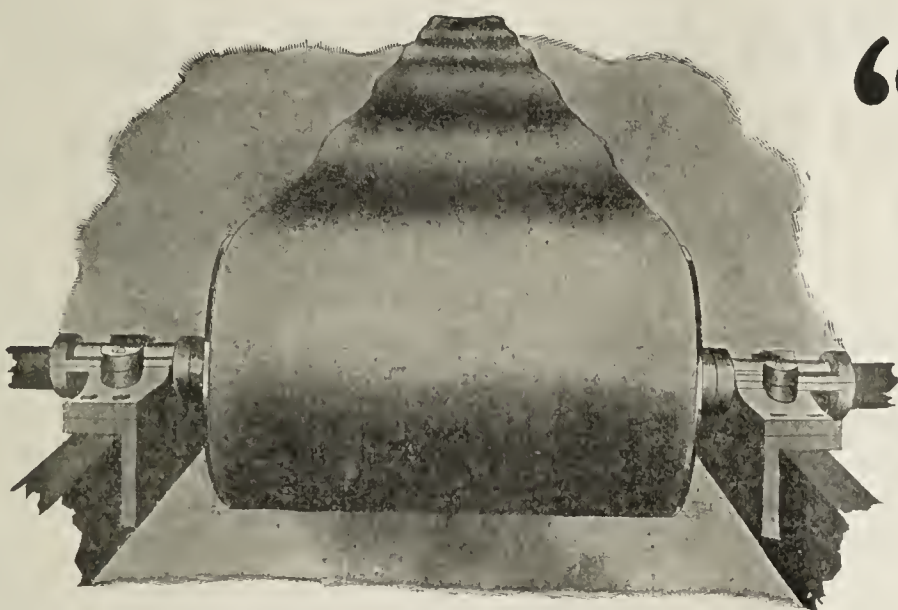
J. C. STEELE & SONS
Statesville No. Carolina

The Chambers Keystone Auger Machine



This Outfit Has Produced 200 Tons of Building Tile in 8 Hours.

CHAMBERS BROS. CO., Philadelphia, Pa.



“ARNO” CONVEYOR BELTING

*Reduces Your Cost of Handling
to a Minimum*

Arno Conveyor Belts are manufactured to render unusually long and satisfactory service.

Made of a combination of duck, friction and extra tough rubber cover, they are especially constructed for carrying ores, broken stone, clay, sand, gravel, etc.

Write for Catalog and Information

CINCINNATI RUBBER MANUFACTURING CO.

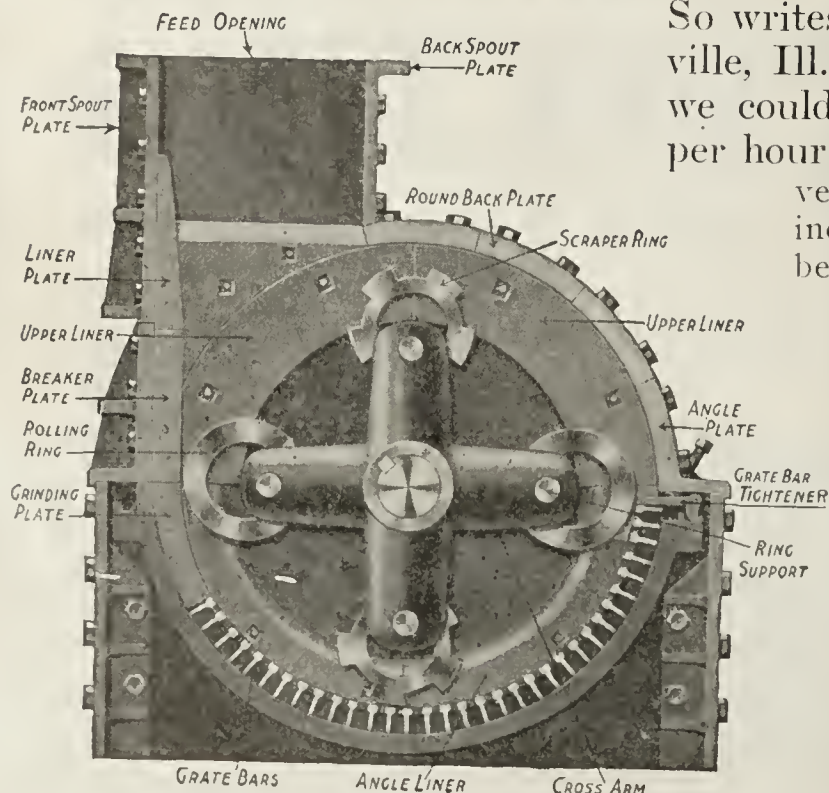
Makers of Belting—Hose—Packings and Molded Specialties

CINCINNATI, OHIO, U. S. A.

Buyers' Directory of Manufacturers—Continued

Roofing Tile Machinery. Bonnot Co. Fate-Root-Heath Co. Freese & Co., E. M. Hadfield-Penfield Steel Co. International Clay Mch. Co.	Schofield-Burkett Cons. Co. Stevenson Co. Tyler Co., W. S. Weller Mfg. Co.	Bucyrus Company. Marion Steam Shovel Co., The Link-Belt Company Thew Automatic Shovel Co. Osgood Co. Weller Manufacturing Co.	International Clay Mch. Co. Lancaster Iron Works, Inc. Robinson, Frank H. Steele & Sons, J. C.	International Clay Mch. Co. Lancaster Iron Works Manufacturers Equipment Co. Potts & Co., C. & G. Robinson, Frank H. Steele & Sons, J. C.	Valves. Crossley Machine Co. Jenkins Bros. Co.
Rope Drives. Dodge Sales & Eng. Co. Hill Clutch Co. Weller Manufacturing Co.	Screens (Rolled Slot) Tyler Co., W. S.	Sieves (Testing) Tyler Co., W. S.	Steel Pallets. Lancaster Iron Works, Inc. Ohio Galvanizing & Mfg. Co.	Stokers. Cokal Stoker Co.	Wagon and Truck Loaders. Link-Belt Company.
Rope (Wire and Manila). Leschen & Sons Rope Co. Manufacturers Equipment Co. Robinson, Frank H.	Screens (Wire) Tyler Co., W. S.	Silent Chain Drives. Link-Belt Company.	Supplies. Bonnot Co. Chambers Bros. Co. Freese & Co., E. M. Hadfield-Penfield Steel Co. International Clay Mch. Co. Lancaster Iron Works Manufacturers Equipment Co. Potts & Co., C. & G. Robinson, Frank H. Steele & Sons, J. C. Stevenson Co. Toronto Fdry. & Mach. Co. Weller Mfg. Co.	Time & Operation Recorder Brown Instrument Co.	Watchman's Clocks. Taylor Instrument Companies
Rotary Dryers. Lancaster Iron Works, Inc.	Screw Conveyors. Caldwell & Son Co., H. W. Weller Manufacturing Co.	Sleeves, Nozzles and Runner Brick Machy. Baird Machine & Mfg. Co.	Tanks and Tank Towers. Caldwell Co., Inc., W. E. Crossley Machine Co. Frost Manufacturing Co. Hendrick Manufacturing Co. Lancaster Iron Works, Inc.	Tramways (Aerial Wire Rope). Link-Belt Company.	Wheels. Robinson, Frank H. Watt Mining Car Wheel Co.
Sand Lime Brick Machinery. Hadfield-Penfield Steel Co. Manufacturers Equipment Co.	Separators Tyler Co., W. S.	Soft Mud Brick Machines. Bonnot Co. Chambers Bros. Co. Hadfield-Penfield Steel Co. International Clay Mch. Co. Lancaster Iron Works. Manufacturers Equipment Co. Robinson, Frank H. Wellington Machine Co.	Temperature & Pressure Regulators. Taylor Instrument Companies	Transmission Machinery. Hill Clutch Co. Weller Manufacturing Co.	Wheelbarrows. Bonnot Co. Fate-Root-Heath Co. Freese & Co., E. M. Hadfield-Penfield Steel Co. International Clay Mch. Co. Lancaster Iron Works, Inc. Manufacturers Equipment Co. Robinson, Frank H. Steele & Sons, J. C. Toronto Fdry. & Mach. Co. Weller Mfg. Co. Wellington Machine Co.
Sand Mills Frost Manufacturing Co.	Sewer Pipe Machinery. Bonnot Co. Hadfield-Penfield Steel Co. International Clay Mch. Co. Manufacturers Equipment Co. Stevenson Company. Toronto Fdry. & Mach. Co.	Sprockets. Caldwell & Son Co., H. W. Dodge Sales & Eng. Co. Link-Belt Company Weller Manufacturing Co.	Thermometers Bristol Co. Brown Instrument Co. Engelhard, Chas. Manufacturers Equipment Co. Taylor Instrum't Companies Tbwing Instrument Co.	Trucks. Lakewood Engineering Co. Steele & Sons, J. C. Toronto Fdry. & Mach. Co. Weller Mfg. Co.	Trucks (Industrial, Electric) Koppel Industrial Car & Eq. Co. Lakewood Engineering Co.
Scrapers, Plows and Clay Gatherers. Eagle Iron Wks. Co. Schofield-Burkett Cons. Co. Toronto Fdry. & Mach. Co.	Shafting. Dodge Sales & Eng. Co. Hill Clutch Co., The Caldwell & Son Co., H. W.	Stacks. Frost Manufacturing Co. Hendrick Manufacturing Co. Lancaster Iron Works, Inc.	Tile Machinery. Bonnot Co. Chambers Bros. Co. Fate-Root-Heath Co. Freese & Co., E. M. Hadfield-Penfield Steel Co.	Turntables. Hadfield-Penfield Steel Co. Lakewood Engineering Co. Lancaster Iron Works Robinson, Frank H. Toronto Fdry. & Mach. Co.	Winding Drums. Fate-Root-Heath Co. Hadfield-Penfield Steel Co. International Clay Mch. Co. Lancaster Iron Works, Inc.
Screens (Clay and Cement). Bonnot Co. Chambers Bros. Co. Fate-Root-Heath Co. Freese & Co., E. M. Hadfield-Penfield Steel Co. Harrington & King Performance Co. Hendrick Mfg. Co. International Clay Mch. Co. Lancaster Iron Works. Link-Belt Company.	Shakers (Testing Sieve) Tyler Co., W. S.	Stiff Mud Brick Machines. Bonnot Co. Chambers Bros. Co. Fate-Root-Heath Co. Freese & Co., E. M. Hadfield-Penfield Steel Co.	Unloader. Sunbury Mfg. Co.	Wire Cloth Tyler Co., W. S.	Wire Rope. Leschen & Sons Rope Co. Manufacturers Equipment Co. Robinson, Frank H.
	Shale Planer. Eagle Iron Works.				
	Sheaves. Crossley Machine Co. Hill Clutch Co. Weller Manufacturing Co.				
	Shovels (Power). Ball Engine Co. Bay City Dredge Works				

"It Crushes the Hardest Brick and Tile Bats to One Eighth of an Inch and Finer, with Ease"



So writes Samuel Anderson & Sons from Taylorville, Ill. "And," they continue, "we believe that we could double the rated capacity of 2,400 lbs. per hour if necessary. The power consumption is very light. The machine was equipped for a ten inch belt, however are only using an eight inch belt of solid woven cotton type and it has given no trouble. Everything seems to indicate that we are using no more than the rating of 6 to 8 H. P."

This is just another testimony of the excellent results obtainable through the use of the AMERICAN.

Are You Saving In This Manner

Let us explain the AMERICAN to you in detail.

The American Pulverizer Co.

18th & Austin St.

St. Louis, Mo.

NEW OSGOOD 29

MOUNTED ON

Continuous Tread, Traction or Railroad Trucks

FURNISHED WITH

Crane, Clamshell or Dragline attachments

IS THE

SUPER STEAM SHOVEL

Find Out About the 1921 Model



Write, phone or wire TODAY. DON'T DELAY.

STEAM SHOVELS

Revolving and Railroad Types

Locomotive Cranes, Clamshell and Dragline Outfits

THE OSGOOD CO.

MARION, OHIO

WHAT DO YOU DO?

It is probable that a new problem presents itself to you—or to some of your associates at least once each week. Do you solve it satisfactorily or do you let it slide? Why not insure yourself against such incidents? Start a factory library, fill it with a few choice books that deal with your plant and manufacturing problems. From this list you should be able to select a splendid assortment.

Brick Drying (English edition).....	1.00	Garages and Motor Boat Houses.....	2.00
Bricklaying in Modern Practice	1.20	Glazer's Book.....	\$1.25
Bricklaying, Rudiments of Practical.....	.75	Hollow Tile Silo, 100 copies.....	5.00
Bricklaying System	4.00	How to Build Furnace Efficiency.....	1.50
Brick Work (Walker).....	.85	Land Drainage.....	2.00
Brickwork and Masonry.....	3.00	Manufacture of Roofing Tile (English Edition).....	1.25
Building Construction and Superintendence, Part 1, Masons' Work.....	6.00	Manufacture of Roofing Tile (Worcester).....	.75
Bungalows, Camps and Mountain Houses.....	2.00	Modern Brickmaking	7.00
Ceramic Industries (A Treatise on) E. Bourry.....	6.00	Observations on Pottery.....	.60
Clay Plant Construction and Operation.....	4.00	Powdered Coal as a Fuel.....	4.50
Clays: Their Occurrence, Properties and Uses.....	5.00	Practical Farm Drainage.....	1.75
Clayworkers' Handbook.....	6.50	Producer Gas and Gas Producers.....	4.00
Clayworking Problems	1.50	Rock Excavation, Handbook of.....	5.00
Directory of Dealers (Raw Ceramic Materials).....	.50	Scientific Industrial Efficiency.....	2.00
Engines and Boilers.....	1.50	Scumming and Efflorescence.....	.50
Engineering for Land Drainage.....	2.50	Silo (The Hollow Tile) 100 copies.....	5.00
Estimating Frame and Brick Houses.....	1.50	Steam Power	2.50
Finding and Stopping Waste in Modern Boiler Rooms. Vol. 2.....	1.00		

Select those books that you want the most, and we will send them to you postpaid upon receipt of price. No books sent on approval. All foreign books subject to 15% import duty.

Brick and Clay Record

610 Federal St.,
Chicago, Illinois

The HADFIELD-PENFIELD STEEL CO.
 BUCYRUS OHIO, U.S.A.

THE AMERICAN NO. 401 COMBINED MACHINE.



Massive, Strong, Efficient. It is designed and built for satisfactory service. Large capacity. Get specification Sheet.

THE HADFIELD-PENFIELD STEEL CO., BUCYRUS, OHIO.

Formerly The American Clay Machinery Co.



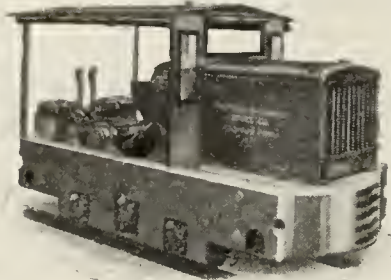
AMERICAN NO. 737 TRUCK

Specially made for soft mud brick. Splendid springs, nice balance. Good materials. A fine truck.

THE HADFIELD-PENFIELD STEEL CO.,

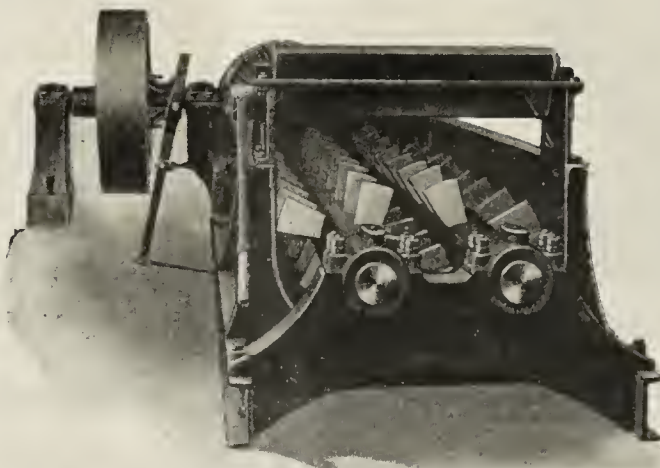
Bucyrus, Ohio.

AMERICAN GASOLINE LOCOMOTIVE.



Most economical clay haulage. Easy to run and cheap on power. Few repairs.

THE HADFIELD-PENFIELD STEEL CO.,
 Bucyrus, Ohio.



AMERICAN NO. 247 CLAY FEEDER

Lots of merit in this feeder which will show in your output. Get particulars. None built better, few operate as well. Sure to please you. Other styles for other purposes.

THE HADFIELD-PENFIELD STEEL CO.,

Bucyrus, Ohio.



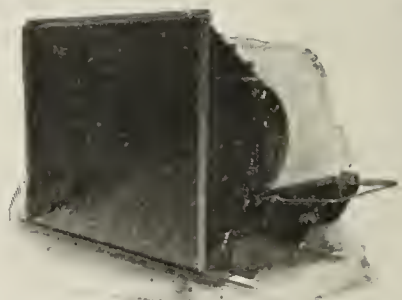
AMERICAN NO. 339 TEN FOOT PAN.

This is an extra large pan and it gives extra large quality and capacity. Low on power and repairs. Get complete description.

THE HADFIELD-PENFIELD STEEL CO.,

Formerly
 The American Clay Machinery Company.

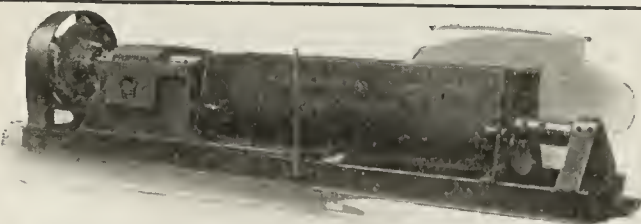
Bucyrus, Ohio.



AMERICAN DUMP CAR NO. 68.

Here's a steel dump car built for business. It runs easily, dumps clear, is handy and durable. Plenty of rivets, can't turn over. Has I beam frame, chilled wheels, Steel axles. Bearings have oil waste cellars and lid. A fine car. Get full detail.

THE HADFIELD-PENFIELD STEEL CO.,
 Bucyrus, Ohio.



AMERICAN NO. 304 PUG MILL.

Here's a mill that is light on power. Is built heavy for big capacity and thorough pugging. Get our pug mill circular.

THE HADFIELD-PENFIELD STEEL CO.,
 Bucyrus, Ohio.

The HADFIELD-PENFIELD STEEL CO.
 BUCYRUS OHIO, U.S.A.

And at Fallston, Pa.



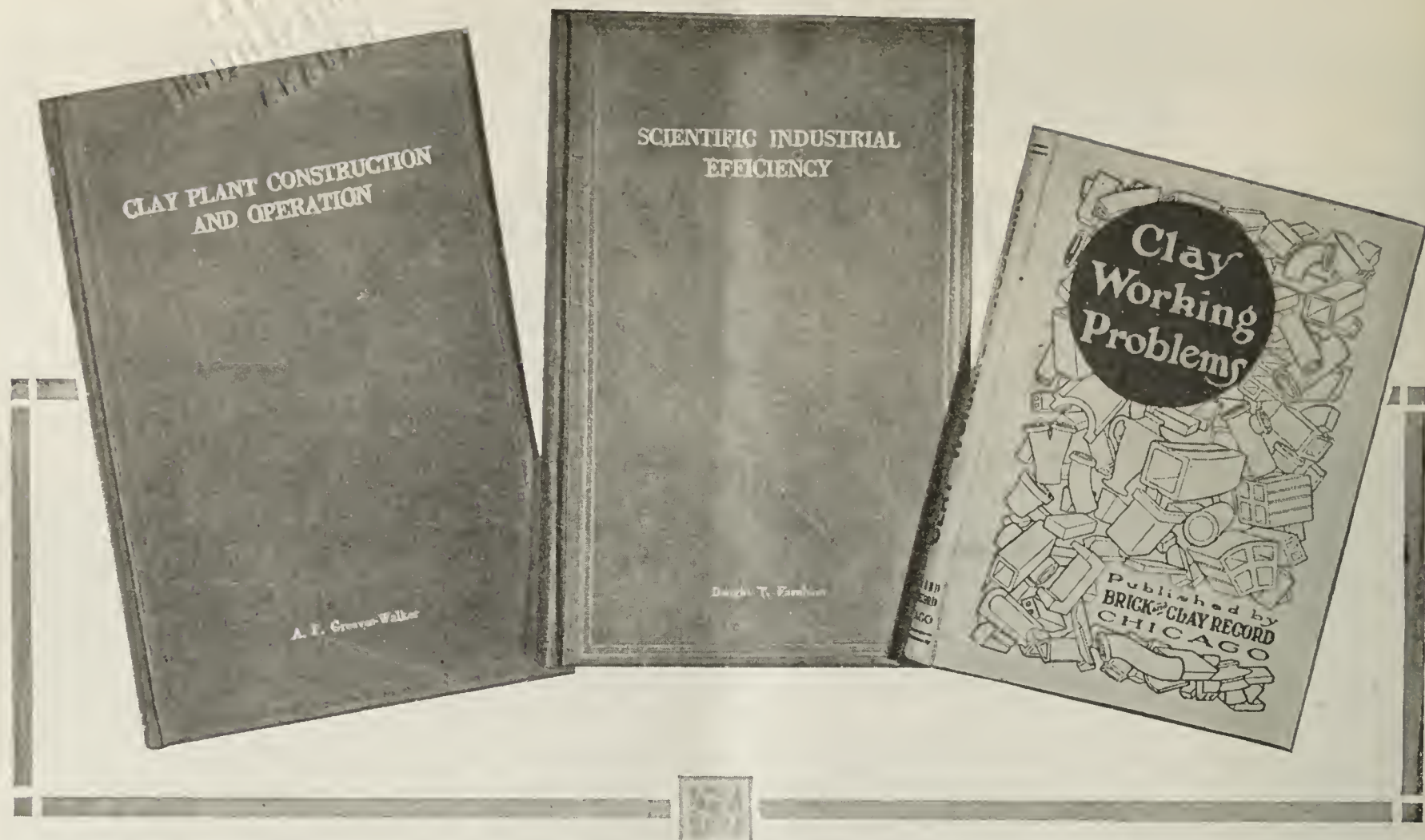
The Fallston Fire Clay Co.

THE Fallston Fire Clay Co., manufacture their beautiful face brick on two Freese Auger Machines and two Freese Rotating Automatic Cutters—

and the Penna. Clay Co. have operated a Freese Union Machine and Freese Automatic Cutter for many years.

E. M. Freese and Company
GALION :- OHIO

Dependable Machinery of Proven Efficiency



Our Contribution to Your Library

Within the past half decade, *Brick and Clay Record* has added to the permanent collection of ceramic literature, not only in America, but also abroad, at least three noteworthy volumes in attractive cloth binding.

Most American clay products manufacturers are thoroly familiar with the situation as it concerned clayworking literature as early as five years ago. Many of the books in the average clay worker's library were of foreign production—books written by English, French and German ceramists covering clay plant practices in their respective countries—very good books in their time but wholly inadequate for the American clayworker working under conditions vastly different from his European colleagues.

Seeing the need of ceramic literature with a distinctly American viewpoint, the editors of **Brick and Clay Record** set about to supply the need. What you see in the illustration above is the result of our labors.

"Clay Plant Construction and Operation," is our most recent production. It ought to have a place as a text book in every university or college that maintains a course in ceramic engineering. It is written by A. F. Greaves-Walker, a ceramic engi-

neer with a wealth of practical experience in the business. The price of this handsomely bound volume is \$4.00 postpaid.

"Scientific Industrial Efficiency," by Dwight T. Farnham, a prominent industrial engineer in the clay products manufacturing industry, has now been on the market for more than two years, enjoying a phenomenal sale, not only in the clayworking industry, but also among manufacturers in many other lines. This book is considered to be a standard reference work wherever scientific industrial efficiency is being considered. The price of this book is only \$2.00 postpaid.

"Clayworking Problems" is to the clay plant as the veteran medical adviser is to the home. It is consulted in times of distress—when the plant or any part thereof is "sick." There is only a very limited quantity of this book left which means that if you have not secured your copy as yet you had better make no further delay. The price is only \$1.50 postpaid.

These three valuable books are our contribution to your clayworking library. Are they there in your bookcase? If not, better order at once, the missing volumes. Send your check, money order, or draft to

BRICK & CLAY RECORD'S Book Department, 610 Federal St., Chicago, Ill.

Classified Advertisements

Classified advertisements are inserted at the following rates: First insertion, eight cents per word, the captions "For Sale," "Wanted," and address, to be counted as a part of the ad. Additional insertions, six cents per word per insertion. No advertisement inserted for less than \$1.00 per insertion. Cash must accompany all orders to insure insertion.

WANTED—HELP

WANTED AT ONCE—Experienced burner and yardman—one who can take charge of manufacturing end of large plant making face brick, fire brick and hollow tile. Would want party to purchase small interest in the plant to insure his associates that he would remain permanently. Address: 7-H, care of "Brick and Clay Record." 7-3

WANTED—POSITIONS

WANTED
POSITION AS SUPERINTENDENT
Thoroughly capable and well recommended man desires to make change. Experienced in paving block, fire brick and hollow tile. Address: 5-3TC, care of "Brick and Clay Record." 5-3TF

WANTED—Position as superintendent of brick or tile plant. Have had many years' experience in the management of different plants throughout the country, with the very best results, which my references will show. Am also an A No. 1 burner. Address: 4-2 Supt., care of "Brick and Clay Record." 4-2-3

An experienced fire brick man desires connection with fire brick company in the capacity of superintendent. Ohio preferred. Best reference. Address: 1-Fire Brick, care of "Brick and Clay Record." 1TF

WANTED—Position as superintendent of brick plant. I am a practical brick maker and employed at present, but desire making a change on account of climatic conditions. Address: 5-3BB, care of "Brick and Clay Record." 5-3TF

TECHNICAL GRADUATE DESIRES POSITION as Assistant Manager with fire brick, terra cotta or paving brick company. Understands down-draft kilns. Employed at present. Three years' experience. Good references. Location, West preferred. Address: 7-Technical, care of "Brick and Clay Record." 7-2

WANTED—EQUIPMENT

I thank your company for the good service rendered to me. As an advertising medium, I will say that your paper gets the results. Not less than 75 letters I received on three small ads.

WANTED—Bensing End Cutter, cutting 8½ in. or 12½ in. Merrick Brick Company, Inc., 606 S. A. & K. Bldg., Syracuse, N. Y. 6-2-2

WANTED—SMALL BRICK PLANT

WANTED—To Buy a small Brick Plant. Will pay cash. Must be a bargain. Address: 6-2Brick, care of "Brick and Clay Record." 6-2-2P

FOR SALE—BRICK PLANT

FOR SALE—BRICK PLANT AND SHALE LAND

Large brick Mfr. plant situated on good railroad; 24 acres of shale, containing buildings and equipment, three Boyd presses, three Eagle dry pans, three boilers, Corliss engine, seven kilns, clay cars, hoist, horses and equipment, trucks for hauling brick. Address: 6-HAB, care of "Brick and Clay Record." 6-TF

FOR SALE—Sixteen kiln modern fire brick plant located in Southwest. Good materials for making all clay products. Can be bought right. Address: 6-2BR, care of "Brick and Clay Record." 6-2-3P

FOR SALE—Brick plant including forty acres, daily capacity twenty thousand brick. Analysis shows extra fine quality of shale and fire clay. Coal mine on land. Five down draft kilns, electric power, dry press machines. Outlook for sale of brick here unusually good. Big opportunity for a reliable brick man with money to invest. Local capital could be interested. No other brick yard in this county. Address Columbia Insurance and Rental Agency, Columbia, Mo. 6-2-2

I thank your company for the good service rendered to me. As an advertising medium, I will say that your paper gets the results. Not less than 5 letters I received on three small ads.

SHALE DEPOSIT—FOR SALE OR LEASE.

Will sell or lease on royalty, deposit containing 300 years supply of high grade shale suitable for manufacture of all kinds of brick or hollow ware. Located on railroad with cheap power and fuel oil. Abundant water. No possible competition, as this is the only shale deposit in San Joaquin Valley. Unlimited local market for output. Unusual opportunity for experienced brick man. Owner, Harry W. Lobb, 430 California St., San Francisco, Calif. 7-2P

FOR SALE—Half-interest in brick plant. Prosperous Southern brick center. Can use practical brick man or salesman. Capacity, 50 M daily. Ready market for output. Address: 7-Investment, care of "Brick and Clay Record." 7-2

FOR LEASE

Brick plant making high grade face and common. Daily capacity 30,000. Plant now in operation with plenty of orders. Owner engaged in other lines of business. Would only consider responsible parties. Plant located in Ohio close to best brick markets. Unlimited amount of best shale. Address: 7-13P, care of "Brick and Clay Record." 7-3P

FOR SALE—BRICK PLANT

A soft mud plant in developing section of Philadelphia; capacity, 22,600 per day. Can be purchased for small amount of cash on easy terms. Address: 6-Plant, care of "Brick and Clay Record." 6-2P

FOR SALE—Ohio modern three-kiln brick and tile plant. Machine and drying capacity for seven kilns. A bargain. Address: 7-AA, care of "Brick and Clay Record." 7-1

MISCELLANEOUS

WANTED

We're looking for a good line of Rough Texture Face Brick to handle. Please send full particulars to:

REINER MATERIAL COMPANY,
5812 S. Robey St.,
Chicago, Ill.

FOR SALE—USED MACHINERY

FOR SALE—Rebuilt four-mold Fernholtz dry press, Eagle 9-foot dry pan. Address: 7-2-Eagle, care of "Brick and Clay Record." 7-2-tf

FOR SALE—1 Elwell-Parker and two Automatic Transportation Company two-ton elevating platform electric trucks equipped with Edison batteries. All are in good second-hand condition. Bargain. Address: 5-2 Trucks, care of "Brick and Clay Record." 5-2TF

SAND LIME BRICK MACHINERY FOR SALE

Sand dryer for steam, lime grinder, automatic sand and lime scales, friction gear for pulling cars out of chamber, 65 horsepower compound engine, two upright boilers, one 5 and 15 horsepower, elevators. Manistee Brick Co., Manistee, Mich. 6-TF

GOOD USED EQUIPMENT WANTED—

The demand is greater than the available supply. Look over your plant, see what machinery is not being used, or which you will replace with larger capacity, and then advertise in "Brick and Clay Record" Classified Department. Published every other Tuesday.

BRICK AND CLAY RECORD, 610 Federal St., Chicago, Ill.

Classified Advertisements

FOR SALE—J. D. Fate Bensing automatic clay cutter—complete with one extra cutting belt. Cuts 2½ in. and 4¼ in.

Also one American No. 8 down cut board delivery hand-cutting table. Reasonable price asked.

Cannon and Company,
Box 281,
Sacramento, Calif. 4-2TF

FOR SALE—One Chambers large size end cut brick machine; one new Steele & Sons brick machine—latest model, never used. No. 0 Thew shovel, in good condition. One crude oil-burning equipment; one new Crawford & McCrimmon waste heat fan—never used. Lot of 6 wooden brick moulds. Lot grate bars, 4 ft. 2 in. and 2 ft. 8 in. long, 1½ cents per pound; 5 sets 18-inch spoke pattern chilled car wheels. Address: 4-GFE, care of "Brick and Clay Record." 4-TF

It will be unnecessary to continue our ad longer. The first insertion brought the desired results.

FOR SALE—One No. 2 two-mould Chambers Brothers brick repress. Box 536, Niagara Falls, New York. 6TF

FOR SALE—An Automatic Freese brick cutter—complete; model T-60, serial 611, practically new. Equipped to make Dunn patented paving brick. Continental Clay Products Company, Munsey Building, Washington, D. C. 4-2-8

FOR SALE—Buckeye traction ditcher, gasoline power, good condition. Address: 7-D, care of "Brick and Clay Record." 7-1

FOR SALE—Snap if taken at once. One 11x24 Murray-Corliss steam engine by Murray Iron Works. Belt drive to one Ideal 62½ K V A, three phase, 60 cycle, 750 R.P.M. generator complete with Westinghouse Exciter, fully equipped switchboard, making complete plant. Address: Department "B," Box 59, Waterloo, Iowa. 6-2-3

Big Bargains

7x12 Davenport, 36 in. gage Saddle Tank
9x14 Vulcan, 36 in. gage Saddle Tank
12—Western 4 yd. 36 in. gage Dump Cars
10—Western 1½ yd. 24 in. gage Dump Cars
1—Thew "O" Traction Shovel—5½ yd. d.p. per
1—3 ton Plymouth Loco. 24 in.—36 in. or 4 ft. 8½ in. gage.

RAIL-TRACK ACCESSORIES

250 tons New 12 to 30 lb.
1000—Steel ties—24 in. gage for 20 or 25 lb. rail
Angle bars, Fish plates, Frogs, Switches, Spikes, Bolts, Lockwashers, Cross Ties.

ZELNICKER IN ST. LOUIS

Balance Listed in Bulletin 290—Get it now.

BARGAINS IN CLAY WORKING MACHINERY.

Three complete outfits for soft and stiff-mud brick plants; one American sewer pipe press, complete with steel frame; one American 9 ft. dry pan; 1 Stevenson 8 ft. wet pan; one 10 ft. and one 7 ft. iron pug mill; one steam, steel and iron constructed hoist; one automatic hoist for use in buildings, used with cage for hoisting to second or third floors; three 7ft. wet pans; one four-mold Boyd dry press; one practically new 10 in. by 20 in. mounted Good Roads jaw crusher with elevator; one Rogers 10 in. by 26 in. jaw crusher; one "Quaker" soft-mud machine with mold sander; 1780 black flat steel pallets, 10 in. by 34 in., at 25 cents each. C. H. Horton Co., Painesville, Ohio. 5-2-TF

BRICK MACHINERY FOR SALE

Arnold-Creager Automatic and SSS, Potts, Martin, Hercules, Bonnot, Freese brick machines; largest International hollow ware machine, never used; 10, 14, 16 ft. pug mills; Freese, Brewer, Steele automatic cutters; 2AT, 6AT, 7AT Bensing tile cutters; Climax crusher; Fate clay feeder; 6,000 galvanized pallets, 10x34; 22,000 A-1 white pine pallets, 10x34; 48 in. by 40 ft. rotary dryer; tilling crusher; Penfield 24 in. combined disintegrator and crusher; No. 5 A-C disintegrator; Frost dry pan; 2 and 6-mold Boyd dry presses; new Potts sander; dryer fans; steam engines, 30 to 100 H. P.; 500 H. P. Corliss; 200 H. P. twin Chandler and Taylor; boilers; pipe rack dryers; fully equipped brick yards. Write for prices on brick molds, barrows, trucks, etc.

Frank McClellan,
14624 Ardenall Ave.,

FOR SALE

Steam shovels, dragline machines, locomotives, cars, crushers, pulverizers, dry pans, engines, boilers, electric sets, cranes, derricks, hoists, dryers, washers, screens, elevators
J. F. Donahoo Company,
Birmingham, Ala.

RAILS FOR SALE

25 tons of 16 lb. rail.
150 tons of 35 lb. rail.

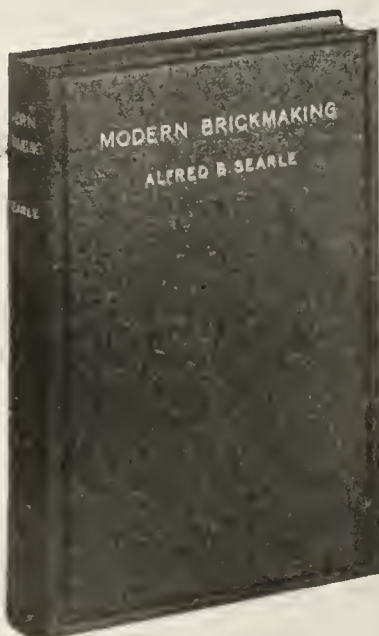
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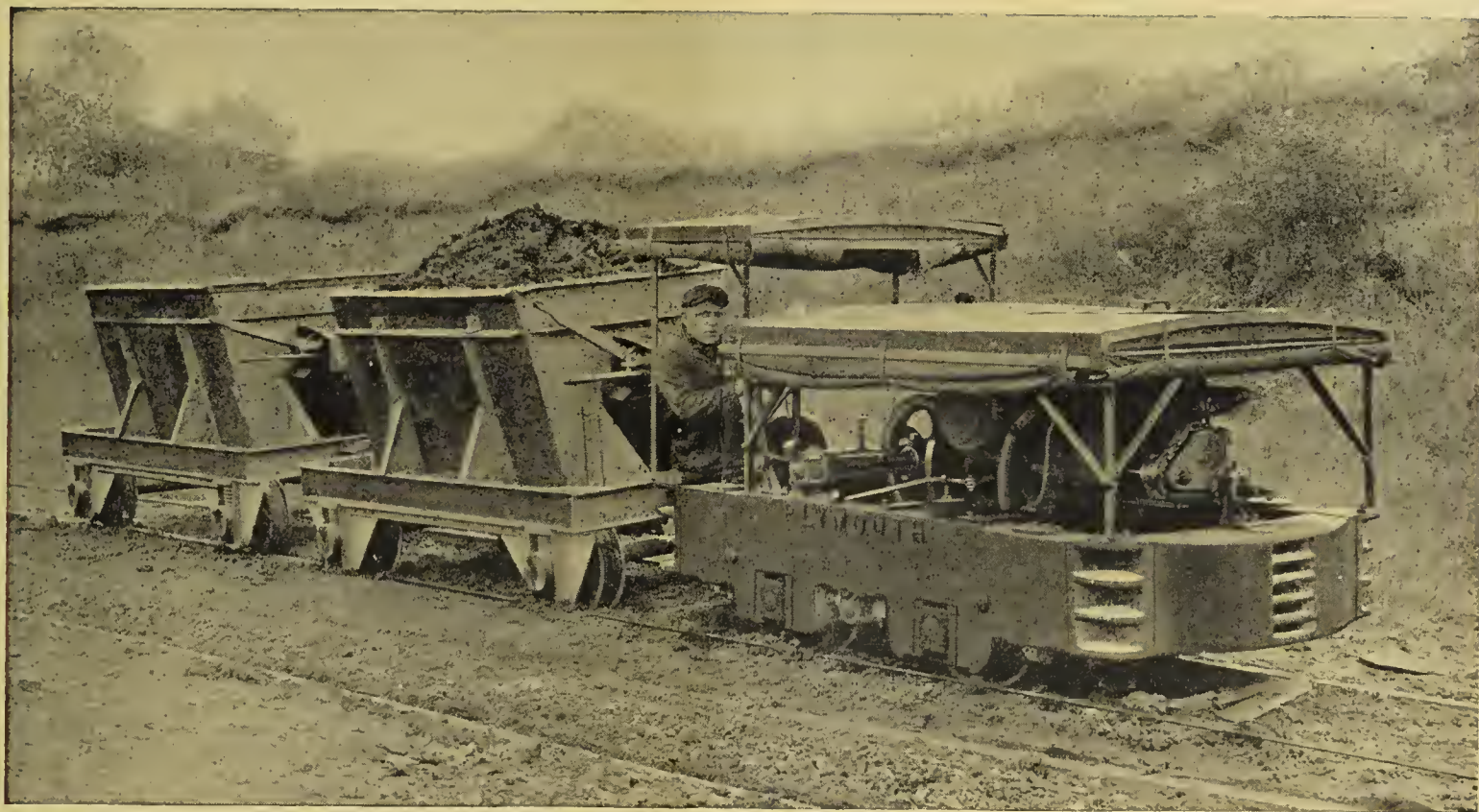
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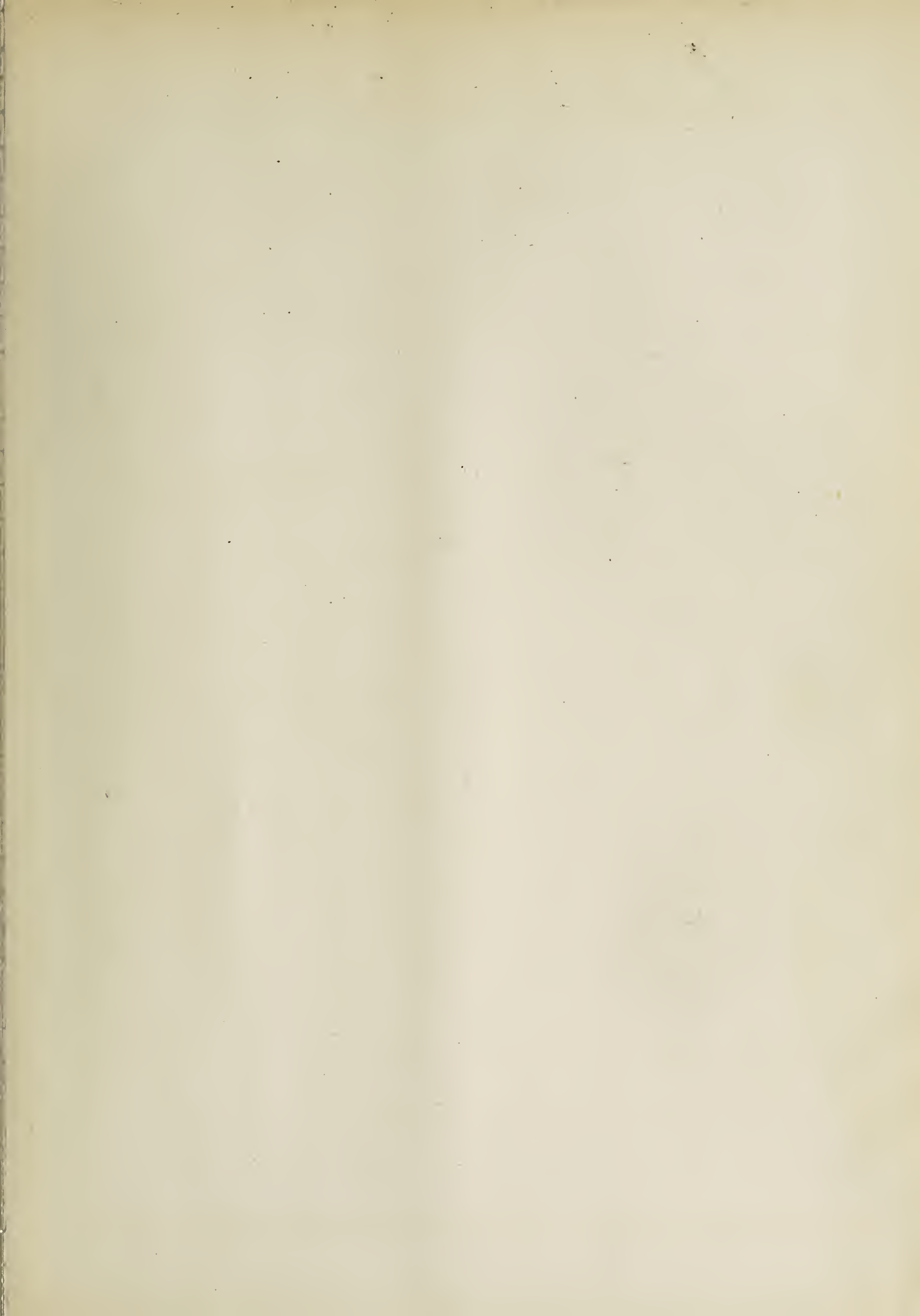
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